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The ILLINOIS Medical Journal

VOL. 102 NO. 5

November, 1952

The Treatment of Surgical Shock

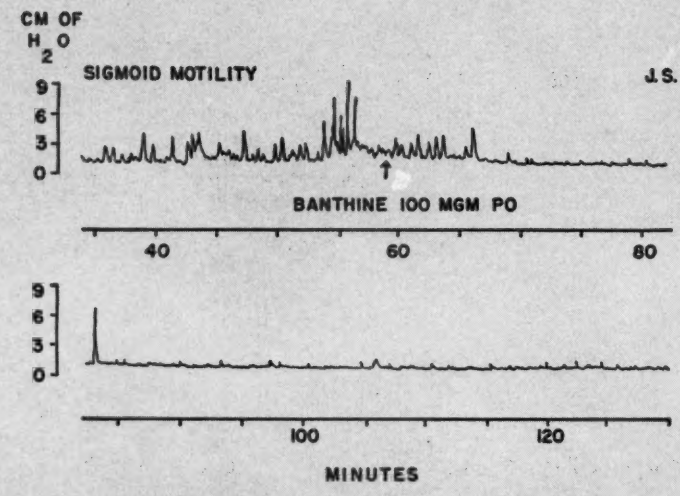
Rehabilitation — Prescription for Living

Jaundice

Surgical Aspects of Jaundice

(See page 5 for Table of Contents)

OFFICIAL JOURNAL OF THE ILLINOIS STATE MEDICAL SOCIETY



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1. Kern, F., Jr.; Almy, T. P., and Stolk, N. J.: Effects of Certain Antispasmodic Drugs on the Intact Human Colon, with Special Reference to Banthine (β-Diethylaminoethyl Xanthene-9-Carboxylate Methobromide), Am. J. Med. *11*:67 (July) 1951.

2. Lepore, M. J.; Golden, R., and Flood, C. A.: Oral Banthine, an Effective Depressor of Gastrointestinal Motility, Gastroenterology *17*:551 (April) 1951.

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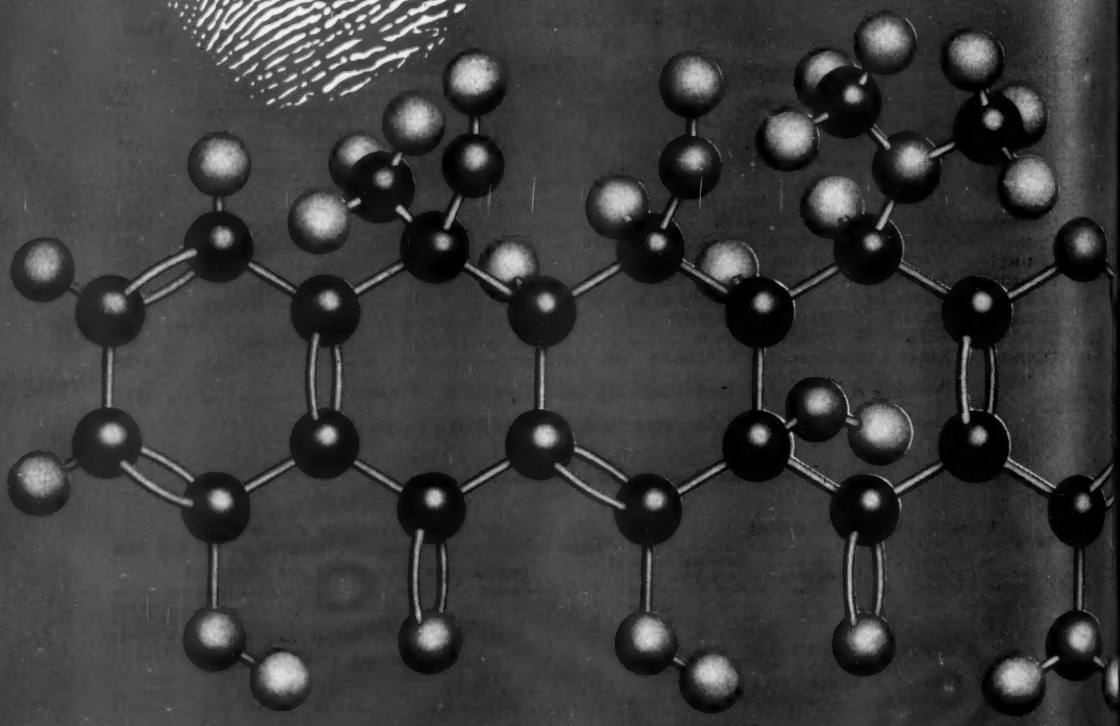

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Official Journal of the Illinois State Medical Society

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Vol 102, No. 5 November, 1952

DUODENAL ULCER IN CHILDREN

Fay K. Alexander, M.D.
Germantown, Phila. 44, Pa.

Abdominal pain in children is not an infrequent symptom. Episodic attacks of this complaint lasting for only a short time and with no associated complaints or findings most frequently can be traced to a dietary indiscretion by the child. Recurring attacks should, however, be given more attention by the family physician than a casual diagnosis of "interval appendix", food allergy, constipation or mesenteric adenitis, for by such attention the presence of a duodenal ulcer will not be overlooked.

The incidence of this disease in children under the age of fourteen is difficult to evaluate but has been conservatively estimated to be in the range of about 5%. If this supposition is valid it would suggest that duodenal ulcer should be given the attention these statistics point up in the differential diagnosis of abdominal pain of a recurring nature in this age group.

The most common symptoms of duodenal ulcer in children are abdominal pain, nausea and vomiting, though the type of symptom complex seems to be dictated by the age of the patient. In the new-born and the neo-natal period the findings may be very dramatic with melena, perforation and death occurring with such rapidity the diagnosis is not suspected, or if suspected, before therapeutic measures can be started. Bleeding and pain are common at the two year level but beyond this age, bleeding becomes less frequent. In the older age groups, gastric upsets and abdominal pain become the most common findings. The pain in the abdomen may not be localized though not infrequently it is peri-umbilical or epigastric in origin. It may be described as a generalized ache and the child frequently obtains relief by lying with the thighs flexed on the abdomen.

Gastro-intestinal disturbances of nausea and vomiting are usually associated with the abdominal pain. Nausea seems to be the more disturbing symptom because of the accompanying loss of appetite. There may be some weight loss and constipation. The vomiting is of the type usually associated with pyloric spasm and disappears when the stomach has been emptied.

There are no laboratory studies of significance except for those patients who show evidence of bleeding in the vomitus or stool.

A diagnosis of duodenal ulcer can be readily made by careful X-ray studies of the upper intestinal tract in these patients. Not all patients with the above symptoms will show a typical niche defect of ulcer even though the duodenal bulb may be irritable, deformed and exhibit a characteristic reaction to inflammation, at the

time of the screen examination. These patients have probably either an active duodenitis or multiple small shallow mucosal erosions of such magnitude as to not be seen either on the screen or films on repeat examinations.

Therapy in the duodenal ulcer in children will be dictated by the clinical course. Persistant bleeding, perforation or stenosis will require surgical intervention. Those presenting the other symptoms can be treated by a conservative medical regime. If good co-operation can be obtained many of these ulcers will heal and the patient will become free of symptoms. Compliance with a careful therapeutic course may be difficult to obtain in children and this group will continue to have symptoms from their ulcer with x-ray evidence of continued activity upon repeated examinations.

This sequence of events suggests the possibility, and clinical histories seem to corroborate the impression, that many of the adult duodenal ulcers had their beginnings during childhood. This should stimulate a search for an accurate diagnosis in recurring abdominal pain, nausea and vomiting in children and if duodenal ulcer is found, continued, careful, patient, understanding and persistant treatment be given with the hope that these lesions can be cured.

ROLAND R. CROSS, M.D., COMPLETES 12 YEARS AS STATE HEALTH DIRECTOR

On Sunday, October 19, Dr. Roland R. Cross completed twelve years as Director of the Illinois Department of Public Health. This is the longest period any Director has filled this office. At a meeting of the Council of the Illinois State Medical Society held in Chicago on the 19th of October, this information was given to the group by the Secretary. The Council directed the Secretary to send a letter of congratulations to Dr. Cross, and also send a letter to the Governor of Illinois telling him of the ususual type of cooperation that has been given to the Illinois physicians by the State Health Department during Dr. Cross's administration. Likewise to inform the Governor that there has been an unusually close relationship developed during this period of time which has been helpful to both the State Health Department and the membership of the State Medical Society in general. Dr. Cross has attended nearly every meeting of the State Society Council, only being absent on two or three occasions when he was out of the state on official business, and once on account of illness. During the period of twelve years, health conditions in Illinois have been materially improved, and both mortality and morbidity rates have been greatly reduced. Dr. Cross has been intensely interested in the development of full time county or multiple-county health departments which are operated and supervised at the local areas, thus getting away from a centralization and making their activities purely autonomous. Illinois now has 19 full time county or multiple-county health departments providing complete public health services for 27 counties. As the establishing of these departments is left to the votes of the people, it is not the fault of the State Director that many counties have not given their approval for the establishment of their own health department. There are 11 full time health departments under municipal control, with many other municipal departments with part time health officers.

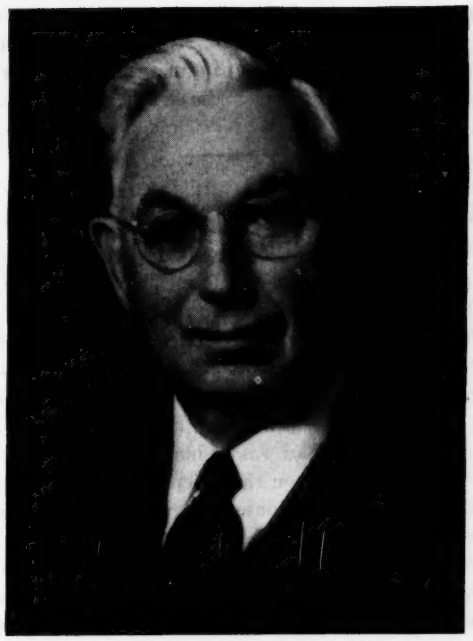
The State Health Department is responsible for the five regional offices of the department which provide a portion of the consultative services to organized local health departments and direct services to the extent of available resources to areas of the State which do not have local health services on a full-time basis.

The functions and services of the Department of Public Health have been expanded each year under direction of Dr. Cross. He has always brought his problems to the Council which has given serious consideration to the matter under consideration. For many years the physicians of Illinois have had a close relationship with the State Department of Public Health, which association has reacted most favorably in improving health conditions throughout the state. In commending Dr. Cross for the fine cooperation which has existed over the past twelve years, the Council expressed the hope that he would continue to serve the people of Illinois in coming years, as he has during this long period, with the assurance that the Illinois State Medical Society has as one of its objectives, the best of medical care, as well as public health services for the citizens of this State.

JAMES SCOTT TEMPLETON, M.D. OUTSTANDING PRACTITIONER FOR 1953.

Several months ago all component and branch societies were notified that they should submit the name and data for their candidate whose name should be submitted to the State Society as the outstanding general practitioner of the state for 1953. The final deadline was October 15, and when the secret committee met to make their selection on October 19, ten candidates had been reported to the Secretary's office.

Five members of this committee had been selected by the president, representing all parts of the State of Illinois. Complete data, as submitted for each of these candidates, was presented to the committee. The committee then went into executive session, and came out with the winner, James Scott Templeton of Pinckneyville, Perry County, Illinois.



Doctor Templeton was born at Pinckneyville in 1871, son of Rev. William Harris and Margaret Eliza (Craig) Templeton. He was a student at the Southern Illinois Teachers College at Carbondale, 1889-91, and received his medical degree in 1898 from the St. Louis College of Physicians and Surgeons. Soon after graduation he located in his home town of Pinckneyville, and has maintained his practice there continuously to this date.

He has always been interested in civic activities, and has been a promoter of his home town throughout his entire life. He served as mayor of Pinckneyville, president of the local school board, and has always been active in church work. He has been a trustee of the First Presbyterian Church Board for 40 years, and chairman of the Board for 25 years. He aided materially in getting the city water works, telephone system and a modern sewerage disposal system for his home town. He has likewise been very prominent in the activities of the local Chamber of Commerce.

He has always been very active in the affairs of the Perry County Medical Society, and was secretary of that society until elected as the first Councilor for that district when it was created in 1926. He remained in the Council of the Illinois State Medical Society until 1939, when he was elected President-Elect of the Illinois State Medical Society. He became president in 1940, and officiated in that capacity at the Annual Meeting held in 1941. He has not missed a single meeting of his state society in more than 30 years, and in recent years has been a member of the House of Delegates at the annual meetings, representing Perry County.

Doctor Templeton has always been a rural general practitioner, starting in the horse and buggy days, and travelled over a considerable area when no hard roads were available. He has delivered more than 3000 babies in the home, and in more recent years has attended many others in nearby hospitals. His office is well equipped with X-ray, physio-therapy and modern laboratory equipment. He has assisted many young men and women to study medicine, and has been interested in all nurse recruiting drives over a period of years.

Doctor Templeton married Anna J. Galloway in 1899, and after her death lived with his sister, who acted as housekeeper for him for many years. In 1939 he married Isabelle J. Boeheim, and they have a daughter now six years of age.

Doctor Templeton is one of those general practitioners who has served his community for more than 50 years, and of whom it is said, he never turned down a call regardless of the ability of the patient to pay for his services. The Illinois State Medical Society will be proud to pre-

sent his name and factual data concerning his activities to the American Medical Association in December, as their candidate for the outstanding practitioner of the United States for 1953.

IT DID HAPPEN HERE

The British find it difficult to understand our laws and in a recent article in The Lancet[1] they decry the reluctance of their Anglo-Saxon brethren to utilize incriminating evidence extracted from an accused person against his will. The reader may recall the case because it was publicized in our papers not long ago.

The accused man was at home with his family in Los Angeles when three deputy sheriffs forced their way into his house as a result of a tip that he was selling narcotics. On entering the man's room they saw two capsules lying on a table near his bed but before the deputies could sieze the evidence, the gentleman grabbed the capsules and put them into his mouth. According to his testimony the officers first tried to choke the capsules out of him but he swallowed them in the scuffle. He was taken to a hospital where a physician extracted the capsules by means of a stomach pump. The accused stated that despite his protests, he had been handcuffed and strapped to a table so that the pump could be used. The retrieved capsules were found to contain morphine and they were used as evidence in court. The sentence was 60 days' imprisonment. The case was appealed and the California state court held the evidence admissible even though the method of obtaining it was illegal.

The case was then carried to the Supreme court which reversed the decision eight to none. According to the testimony, the State of California had contended that the accused man swallowed an opiate and that "washing of his stomach was merely routine first aid, essential to his physical well being." In this respect they justified the use of the stomach pump. But the Supreme court disagreed. Six jurors decided that the use of the stomach pump violated the 14th Amendment: ". . .nor shall any state deprive any person of life, liberty, or property, without due process of law. . ."

Mr. Justice Frankfurter regarded the action of the law enforcement officers as "too energetic combating of crime." In rendering his decision he stated: "Illegally breaking into the privacy of the petitioner, the struggle to open his mouth and remove what was there, and the forcible extraction of the contents of his stomach. . . .was to close to the rack and the screw to permit of constitutional differentiations." . .

Two justices held that the 5th Amendment had been violated as no person ". . . .shall be compelled in any criminal case to be a witness against himself. . ." The English claim that their laws protect an accused person by drastically restricting or excluding the evidence against him if procured from him by threats, promises, or coercion. In this case, however, they felt that Parliament would have been obliged to admit the evidence.

Although we have no sympathy for the dope peddler in this legal problem, we are dubious about the physician who used the stomach pump on a man who was handcuffed and strapped to a table. This procedure has all the earmarks of the co-operation between German physicians and the Nazi government.

1. Evidence by Stomach Pump. The Lancet, Jan. 10, 1952.

EARLY PLAGUES AND PESTILENCES OF THE PEOPLES WHO FIRST CAME TO THE AMERICAS

David J. Davis, M.D.
Permanent State Medical Historian of Illinois

(Evidence concerning the sources of our Exotic Diseases.)

One of the most searching analyses of the epidemics of the world up to the year 1800 was made by Noah Webster, the Lexicographer (Noah Webster, History of Epidemics and Pestilences, 2 Vols. 1799. Hartford, Conn.). He personally had observed the influenza outbreaks of the time and in 1793 had noted an epidemic of scarlatina anginosa. Shortly thereafter in the same year occurred the great epidemic of yellow fever in Philadelphia. His conception of contagion was definitely a miasmatic one, a viewpoint which to some degree no doubt distorted his observations and conclusions.

Webster's interest, however, in epidemics and pestilences was so excited by these experiences that he was led to collect and analyze a most comprehensive array of pertinent data. His

knowledge as a lexicographer of the major languages of the world enabled him to do this most effectively. This data yield an impressive picture of the status of these diseases not only in Europe and America, but in many other parts of the world. In order to aid us in understanding this disease picture at the time that the European white men were first migrating to the Americas, Webster's data are given in chronological order during a period covering roughly the 15th and a part of the 16th centuries.

He first notes the great epidemic of bubonic plague in 1346-48 as well as several other outbreaks and diseases and then, by tabular arrangement, proceeds as follows:

1411 — Dysentery carries off 14,000 persons in Bordeaux.

1436 — Epidemic fever in Venice attributed to stagnant water.

1472-1477 — Epidemics in Italy, France, England and Germany. 40,000 died in Paris.

1481-1483 — Deadly plague in Italy and Germany.

1482 — A kind of pleurisy epidemic in Italy.

1483 — A new plague in England, namely sweating sickness. Recurred in 1506, 1518, 1528 *and 1551. (It spread widely in other countries)*

1494 — A report current that syphilis arrived from America.

1495-1496 — The plague raged in Portugal.

1496 — An epidemic of leprosy in Germany.

1496 — A mortal plague carried off 30,000 in London.

1500 — The plague carried off 500 in Brussels.

1505 — Pestilential diseases universal.

1510 — Influenzas and catarrh prevalent. In France known as cocoleuche.

1538 — A mortal dysentery raged all over Europe.

1564 — Epidemic quinsies very mortal.

Webster notes an epidemic of smallpox among the American Indians in 1618; also in 1638 and frequently thereafter.

Webster continues his table of pestilences, plagues, fevers, spotted fevers, anginas, pleurisies, etc., through the 18th Century. With the exception of the plague, syphilis, and leprosy there is little point in attempting a differential diagnosis of this complex mass of transmissible diseases. One should consider the data simply as crude estimates of the magnitude of the very general devastations.

Interesting data on these predatory European diseases have also been collected by Fleming* in his studies (with references) on animal plagues.

It is an even more sorry account of the devastating diseases in both animals and man flourishing in Europe during these centuries at the time of and just following the discovery of the Americas.

The following selected notes will illustrate:

1491 A. D. The sweating sickness in mankind in Ireland..... An epidemic swept away cattle and a famine afflicted Ireland.

1492 A. D. In Ireland, this summer was so dry that abundance of cattle perished for want of water; and the air grew so pestilential that a multitude of people and particularly the Lord of Slane died of the plague.

1495 A. D. In the preceding year, there was a severe mortality amongst wild animals presaging (it was remarked) the bubonic plague which occurred this year in the human species. (In Ireland).

1499 A. D. In Germany, there was a dreadful murrain in cattle, and people were much afflicted by pestilence. Schenkins tells us that famine reigned in many parts of Europe accompanied by disease.

1501 A. D. Tremendous inundation in Silesia. As a consequence an epizooty among cattle and many other kinds of animals.

1504 A. D. Pigs died in large numbers. Many farmers drove out fine herds in the morning of which one third did not return at night ..... Neither had the previous great mortality ceased; ..... so that in some places the half, in others one third of the people died (In Ireland).

1513-14 A. D. Severe winter, sudden thaw, famine, rains, and inundations..... An epidemic in mankind raged at the same time in Italy and England

Fracastor described these cattle diseases as cattle plague or Rinderpest. Schenkins informs us that at this time Venice and Padua were visited by a malignant dysentery from the people having eaten the flesh of some diseased cattle that the butchers imported from Hungary.

1517 A. D. In the beginning of this year (says

*George Fleming. Animal Plagues. London, Chapman and Hall. 1871.

Tyenina) raged a pain and inflammation of the throat, so pestiferous, malignant and contagious that whoever, within six or eight hours' seizure had not proper remedies applied died in 16 to 20 hours. The epidemic of sweating sickness began at midsummer this year.

1518 A. D. A severe epizootic disease appeared among the horses — abscesses about the head and throat. . . . . .

1529 A. D. During the reign of the sweating sickness in mankind, the weather was most inclement all over Europe Pestilence in man and animals raging nearly everywhere.

1530 A. D. During the pest at Milan, according to Ripamontius, after mankind had been seized with the disease, cattle were attacked.

1539 A. D. In Ireland, fever and bloody fluxes being rife everywhere, whereof many died . . . . . In England in 1539 the 31st year of Henry VIII was great death of burning agues and fluxes.

1541-2 A. D. At this time plague appeared in mankind in many parts of Europe, but especially at Constantinople.

1543 A. D. By reason of a great mortality among the cattle occasioned by great rains in the preceding season, meat rose to such an excessive price that mutton was sold at two shillings and four pence the quarter . . . . . the consideration whereof induced the Lord Mayor (London) and Common Council to make a sumptuary law, for preventing luxurious eating; whereby the Mayor was restrained from having more than seven dishes at either dinner or supper.

1552 A. D. Anthrax appeared among cattle at Lucca in Italy. . . . . In this disease it was worthy of notice that if the blood of any of the infected animals came in contact with the bare skin of a man it produced carbuncles, which, if not opened, were harmless — a wonderful circumstance; but if opened, and not immediately cauterized, they would rapidly spread, and be the cause of speedy death.

1567 A. D. Smallpox raging in the human species in many countries . . . . . Sometimes it happens, as Facinus relates, that the plague passes from man to pigs not on account of any similarity in their dispositions but in their flesh. . . . . .

1580-1 A. D. Influenza in man, as well as malignant fever and smallpox, raged over Europe.

1586 A. D. According to Forster, there was an epizooty of rabies among dogs during the epidemic plague in Flanders, Turkey, Hungary and Austria. . . . . Dogs, with hunger and madness ran up and down the country, biting and killing cattle and one another.

1590 A. D. Rabies in wolves was epizootic at Montbelliard.

1598 A. D. In the same year there appeared ergotism in the human species.

1599 A. D. Plague in mankind in various parts of the world, especially in France and Upper Italy. An epidemic of dysentery in Venice and Padua.

1604 A. D. Rabies canina was epizootic in Paris and caused great alarm.

1610 A. D. Catarrh prevailed in mankind throughout Europe.

1616 A. D. Malignant angina appeared in the human species at Naples.

From this volume by Fleming one could continue such reports as the above for the following 200 years. As will be more fully stated later, the data fortify what has often been quoted concerning transmissible disease in Europe in both animals and man during the indicated centuries.

The well known authority, Hecker has written on the Epidemics of the Middle Ages, noting especially three devastating diseases.

The Black Death, Hecker states, appeared in China in 1333 where 5 million died. Fifteen years later it arrived in Europe on the Island of Cyprus, from whence it spread rapidly and widely killing a large fraction of the people. From time to time it has reappeared in many parts of the world and still prevails as one of the most dreaded diseases. Sigerist notes that it appeared in 542 A. D. in Byzantium and, again, about a thousand years later as the Black Death in Europe.

The sweating sickness (in English, the Ephemera) Hecker says began in 1478 to 1482 in Europe. It reappeared several times in serious epidemic form, finally reaching England in 1551.

The third epidemic described by Hecker was the Dancing Mania, a peculiar and little understood mass hysteria which afflicted thousands of

people in Europe during the 15th century. No such disease is known today.

Another monumental study of the mass action of disease is entitled "History of Epidemics in Britain" from A. D. 664 until the present time by Charles Creighton of the University of Cambridge (Cambridge, England. University Press. 1891).

The year A. D. 664 is taken as a beginning date since the Plague as described by Beda occurred at that time and continued for some twenty years. This outbreak in Britain and Ireland may have been an extension of the Justinian Plague in Eastern Europe. For several centuries thereafter occurred many epidemics which are what Creighton calls famine pestilences, that is, infections following or associated with famine. He lists several score of such epidemics over a period of about 700 years or until the time of the Black Death in the 14th century. During these medieval centuries he states that they included such sicknesses as spotted fever (typhus), dysentery, lientery and putrid sore throat. Following exhaustive chapters on leprosy and the bubonic plague of 1348-9, he considers the many outbreaks of such diseases as the sweating sickness, influenzas, undetermined fevers, fluxes, jail fevers (typhus), the French pox (syphilis), smallpox, measles and others. One is given the general impression that during the medieval periods there was one almost continuous devastation by a variety of plagues. A few were recognizable but for the most part were undifferentiated fevers, fluxes, and contagions.

In the 16th and 17th centuries again appeared a variety of infections which through the more modern work of Sydenham and others began to become identifiable.

The records of Britain's epidemics are quite in accord during these earily periods with the accounts of European epidemics already given above by Webster and by Fleming, and serve to emphasize the thesis that the peoples of the various countries were heavily infected during these great migration centuries. Only by perusing such reports can one appreciate or understand the excessively high mortality and morbidity data of those times.

Sigerist in his "Civilization and Disease" (Cornell University Press, New York, 1943) devoted a chapter to disease and history. There he emphasized the wide prevalence of such diseases as the plague, typhus, leprosy, malaria and many others. He published in this book an engraving (about 1600) showing Henry IV touching scrofulous patients; which gives some impression of the high incidence of tuberculosis during that period.

No one has stated more succinctly or more dramatically the status of the great epidemic diseases during the period with which we are concerned than Garrison (History of Medicine, W. B. Saunders Company, Philadelphia, 1914, page 126): "During the Middle Ages, European humanity was plagued with epidemic diseases as *never before or since*, and these were variously attributed to comets and other astral influences, to storms, the failure of crops, famines, the sinking of mountains, the effects of drought or inundation, swarms of insects, poisoning of wells by the Jews and other absurd causes. *The real predisposing factors were the crowded condition and bad sanitation of the walled medieval towns, the squalor, misrule, and gross immorality occasioned by the many wars, by the fact that Europe was overrun with wandering soldiers, students and other vagabond characters and by the general superstition, ignorance and uncleanliness of the masses, who even in their bathhouses, were crowded together in one common compartment, sometimes with the sexes commingled.*" Then Garrison proceeds to specify the individual diseases: leprosy, ergotism, scurvy, influenza, chorea, sweating sickness, black death, syphilis and so on. It was about this time too (the 16th century) or a little later that many of our common epidemic diseases of today began to appear in many localities: measles, chickenpox, smallpox, scurvy, typhus fever, diphtheria, and whooping cough. This array of transmissible predators appearing in Europe offered a timely challenge of the first magnitude not only to the physicians of the period, but also to the fertile Renaissance medicine represented by such geniuses as Harvey, Gilbert, and Browne and a little later by the renowned Sydenham (1624-89 who was to "open the door" considerably wider than ever before to the control of infectious and other diseases.

A fitting summary of what has been presented in this chapter is the following quotation from a paper by Brown (Bulletin of the Society of Medical History, Chicago, 1917, Vol. II, page

1) in which he analyzed the evidence bearing upon the incidence of epidemic and other infectious diseases during the 15th and 16th centuries. He emphasized the enormous concentration of these diseases during that period — a veritable piling up as it were of predatory organisms dangerous to both humans and animals. Dr. Brown quotes as follows:

"I shall show in my review of the hygienic condition of that period, its epidemics, the testimony of eye-witnesses, and of historians of the time between 1483 and 1522, that there was good ground for the opinion of Rosenbaum that there existed during the period named, and for a long time thereafter, a certain state of insalubrity that he has chosen to call the *genius epidemicus*..... A short examination of the authors who wrote at that period will reveal to us that from the accession of Pope Innocent VIII in 1483 to the death of Pope Leo X in 1522, all Europe was teeming with disease." He mentioned typhus, typhoid, miliary fever, buboes (plague?), leprosy, elephantiasis and sweating sickness. He was inclined to the view that syphilis was an earlier disease and then was revivified in more virulent form and that the term genius epidemicus for the period was justified because of this "state of insalubrity."

The evidence therefore would seem reasonably convincing that just at the time of the discovery of the Americas, the incidence of the diseases of Europe and of Africa, or at least parts of it, had reached such astounding proportions as to become a veritable center of plagues and pestilences and well fitted to rapidly and thoroughly infest any part of the world with which these continents might have communication.

We may conclude this paper then with the statement that the primary purpose of the data presented here is to call attention to the predatory diseases, plagues and pestilences appearing in great variety in Europe during the very years when the mass movement of peoples to the Americas was in its initial stages. Perhaps better than in any other way, these data reveal the ubiquitous character of these infectious diseases which soon were to overwhelm the natives of the newly discovered Western continents. With startling rapidity they penetrated every section of the new land, sparing no one and being frightfully malignant, especially for the primitive Indians. Up to that time, as already stated, the great epidemic diseases had never before occurred there, so far as is known.

WEDDING BELLS FOR DR. LULL

Wedding bells rang last month for the boss and his bride.

The boss, of course, is Doctor George F. Lull, secretary and general manager of the American Medical Association, and his bride is the former Miss Mildred Louise Beckman, who has served in a secretarial capacity for the AMA Council on Medical Service for the past eight years.

They were married September 10 in a quiet ceremony in Mrs. Lull's home town of Fremont, Nebraska.

Dr. and Mrs. Lull left immediately for Athens, Greece, where he attended the annual meeting of the World Medical Association. They returned to Chicago late in October.

CORRESPONDENCE

"TODAY'S HEALTH"

We are living in an era when we automatically discard that which is useless and streamline our lives and possessions to meet the modern trend. As Americans we are interested in better living and better health and an intellectual, yet practical approach to both. The magazine, "Today's Health" and practicability are synonymous. Study the magazine! Peruse its contents! Where can you get so much for so little. For a small stipend the reader receives authentic health information given in clear and simple terms. "Today's Health" is a textbook which educates its readers in an up to date approach to health. It answers "small" questions which often are bothersome but which do not seem sufficiently important to take up a doctors precious time. It is a safeguard against ignorance and provides scientific guidance for those who have the responsibility of promoting good health in the home, school, community. For these reasons it is important for every doctors' wife to know "Today's Health".

Arouse your curiosity! If you belong to the group who has accepted the magazine as a good thing-admired the attractive covers, glanced casually over its contents please take this test. Take time out! Study and analyze an issue of "Today's Health" carefully — from cover to cover. Before you finish the issue you will not only find the answer to many of your own health problems, but you will be finding answers to many of the health problems of your friends and acquaintances. This knowledge will enable you to gain the reputation of being a well informed doctor's wife, a liaison between your doctor husband and that portion of the public with whom you come in contact.

"Today's Health" covers the life span, from pediatrics to geriatrics — new mothers and their babies to aged people. For example, it meets a common problem in Dr. Paul Witty's article "Comics and Television, Opportunity or Threat?" Articles appear which stress parent-child relationships, emotional health, diet, weight control, and care of the skin. Articles on disease are presented from the preventive viewpoint and stress opportunities for avoiding illness.

Today more than 22,000 copies of "Today's Health" are mailed each month to teachers of home economics, physical education, biology, social science, physiology, and kindergarten.

A copy of the magazine should be in the waiting room of every doctor and dentist. Instructors in Teachers Colleges and schools of education will find it useful because it offers fresh original material which appeals to the adult mind. Superintendents of nurse training schools should use it for reference reading. The public health and visiting school nurses will find the

magazine of special use in dissemenrating health information in the Community. "Today's Health" deals with the simple but fundamental principles of health that affect daily living in homes, schools and communities.

The furtherance of health education is one of our responsibilities as doctors wives. The most effective tool, — neatly packaged, — and available to us without any effort on our part is "Today's Health". The educators and those being educated appreciate being presented with authenticated facts in clear and concise terms-facts which can be digested quickly and easily.

Each time we place a copy of "Today's Health" in the hands of a layman we are performing a public service. We are helping to destroy quack medical ideas and practices. We are helping the laity to learn about the progress made in the field of medicine and the high standards of the medical profession. In so doing we gain respect for this profession and help combat propaganda thus preserving the American way of medicine.

Members of the Woman's Auxiliary to the Illinois State Medical Society may place their subscriptions for the magazine with the "Today's Health" Chairman of their own auxiliary. If there is not a "Today's Health" Chairman the President or the Third Vice president will accept subscriptions. Members-at-Large may forward their subscriptions to Mrs. G. H. Edwards, Chairman of Members-at-Large, Pinckneyville, Illinois or directly to the office of "Today's Health", 535 N. Dearborn St., Chicago 10, Illinois. Non-auxiliary members are asked to send their subscriptions to the Chicago office of "Today's Health". For yourself, or as a gift, a subscription represents an investment which pays large dividends. In this day of crusades let us hoist our banner, and crusade, with vim and vigor for "Today's Health".

THE INTERNATIONAL ACADEMY OF PROCTOLOGY 1952 AWARD CONTEST

The International Academy of Proctology takes pleasure in announcing its Annual Cash Prize and Certificate of Merit Award Contest for 1952-1953. The best unpublished contribution on Proctology or allied subjects will be awarded $100.00 and a Certificate of Merit. Certificates will be awarded also to physicians whose entires are deemed of unusual merit.

This competition is open to all physicians in all countries, whether or not affiliated with the International Academy of Proctology. The winning contributions will be selected by a board of impartial judges, and all decisions are final.

The formal award of the First Prize, and a presentation of other Certificates, will be made at the Annual Convention Dinner Dance of the International Academy of Proctology in May of 1953.

The International Academy of Proctology reserves the exclusive right to publish all contributions in its official publication, "The American Journal of Proctology and Gastroenterology."

All entries are limited to 5,000 words, must be typewritten in English, and submitted in five copies. All entries must be received no later than the first day of April, 1953. Entries should be addressed to the International Academy of Proctology, 43-55 Kissena Blvd., Flushing 55, New York.

CHICAGO SOCIETY OF PHYSICAL MEDICINE AND REHABILITATION

To the Editor:

Meeting of the Chicago Society of Physical Medicine and Rehabilitation.
Date: Wednesday, December 3, 1952
6:00 P.M. Dinner — Pizzeria Napolitana, 907 Taylor St., Chicago $2.75 per plate.

Business meeting immediately following dinner.

SCIENTIFIC SESSION 8:00 P.M.

Place: University of Illinois Medical School, Room 106, 1819 W. Polk St., Chicago 12, Illinois

TOPIC: "Physiologic Devices for the Facilitation of Work Output in the Rehabilitation of the Disabled".

Presented by: Dr. Frances A. Hellebrandt.

Yours truly,
Joseph Koczur, M. D.
Education & Publicity Com.
Chicago Society of PM&R

NORTH SIDE BRANCH of the CHICAGO MEDICAL SOCIETY Thursday, December 4, 1952 DRAKE HOTEL

8: p. m.

Panel Discussion

WHAT'S NEW IN MEDICINE, SURGERY AND OBSTETRICS

"What's New in Antibiotic Therapy" Dr. Harry F. Dowling Professor of Medicine and Head of the Department, University of Illinois College of Medicine, Chicago

"What's New in Dermatology" Dr. Paul K. Weichselbaun Clinical Assistant Professor of Dermatology, University of Illinois College of Medicine, Chicago

"What's New in Pediatrics" Dr. John A. Bigler Chief of Staff, The Children's Memorial Hospital, Chicago

"What's New in Hypertension" Dr. Geza de Takats Clinical Professor of Surgery, University of Illinois College of Medicine; Chairman, Department of Surgery, St. Luke's Hospital, Chicago

"What's New in Urology" Dr. Norris J. Heckel Clinical Professor of Urology, University of Illinois College of Medicine; Chairman, Department of Urology, Presbyterian Hospital, Chicago

"What's New in Surgery of the Colon" Dr. James R. Cross Senior Attending Surgeon, Henrotin Hospital, Chicago; Attending Surgeon, Veterans Administration Hospital, Hines Illinois.

"What's New in Vascular Surgery" Dr. Ormand C. Julian Clinical Assistant Professor of Surgery, University of Illinois College of Medicine, Chicago

"What's New in Obstetrics" Dr. Ralph A. Reis Professor of Obstetrics and Gynecology, Northwestern University Medical School, Chicago

DISCUSSION

FELLOWSHIP GATHERING

5:30 p.m.

DINNER

6:30 p.m.

F. Lee Stone, President — Caeser Portes, Secretary-Treasurer

AMERICAN ACADEMY OF OB-GYNE. HOLDS FIRST CLINICAL SESSION

The First Annual Clinical Session of the American Academy of Obstetrics and Gynecology will be held December 15-17 at the Palmer House, Chicago.

The meeting will feature six general sessions and 48 discussion groups of 40 Fellows each. There also will be at least 15 new scientific exhibits and about 60 technical displays.

The annual banquet Tuesday evening, December 16, will feature an address by the retiring president, Carl P. Huber of Indianapolis. The first truly national organization in its field, the Academy was incorporated August 14, 1951, and already has some 2400 qualified Fellows.

Election of officers will take place at the annual business meeting Tuesday morning.

Program chairman is Ralph A. Reis of Chicago.

THE U.S. CIVIL SERVICE COMMISSION EXAMINATION

The United States Civil Service Commission has announced a Medical Officer examination for filling the positions of Rotating Intern, Psychiatric Resident, and General Practice Resident in St. Elizabeths Hospital in Washington, D. C.

The Rotating Intern positions pay $2,800 a year, Psychiatric Resident, $3,400 to $4,200, and General Practice Resident, $3,400 to $3,800 a year. Education and training is required. No written test will be given. The maximum age limit is 35 years (waived for veterans).

Full information and application forms are available at most first- and second-class post offices, and at the U. S. Civil Service Commission, Washington 25, D. C. Applications will be accepted until further notice by the Executive Secretary, Board of U. S. Civil Service Examiners, St. Elizabeths' Hospital, Washington 25, D. C.

SIXTEEN CLINICS FOR CRIPPLED CHILDREN LISTED FOR DECEMBER

16 clinics for Illinois' physically handicapped children have been scheduled for next month by the University of Illinois Division of Services for Crippled Children. The Division will

conduct 10 general clinics providing diagnostic orthopedic, pediatric, speech and hearing examinations along with medical social and nursing services. There will be 4 special clinics for children with rheumatic fever and 2 for cerebral palsied children.

Clinics are held by the Division in cooperation with local medical and health organizations, both public and private. Clinicians are selected among private physicians who are certified Board members. Any private physician may refer or bring to a convenient clinic any child or children for whom he may want examination or may want to receive consultative services.

The December clinics are:

December 3 — Elgin, Sherman Hospital

December 3 — Rock Island (Cerebral Palsy), Foss Home, 3808 — 8th Avenue

December 4 — Macomb, Marietta Phelps Hospital

December 9 — Peoria, St. Francis Hospital

December 9 — East St. Louis, Christian Welfare Hospital

December 10 — Hinsdale, Hinsdale Sanitarium

December 11 — Elmhurst (Rheumatic Fever), Memorial Hospital of DuPage Co.

December 11 — Springfield, St. John's Hospital

December 12 — Chicago Heights (Rheumatic Fever), St. James Hospital

December 16 — Peoria, St. Francis Hospital

December 16 — Effingham (Rheumatic Fever), Douglas Township Building

December 17 — Chicago Heights, St. James Hospital

December 17 — Springfield (Cerebral Palsy), Memorial Hospital

December 18 — Rockford, St. Anthony's Hospital

December 18 — Normal, St. Joseph's Bloomington

December 19 — Chicago Heights (Rheumatic Fever), St. James Hospital

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BLADDER MALIGNANCY

Since carcinoma of the bladder usually has an insidious onset and grows silently and sluggishly, one should be alert to recognize its first sign. It is quite apparent, as one reviews these cases, that procrastination is folly, but whether the fault lies with the patient or the physician, cannot be determined. Almost fifty per cent of these cases were seen after the presenting symptom of hematuria or vesical irritability had been present over six month before diagnosis was established; only fifteen per cent of the cases were seen within one week of onset of symptoms. Hematuria, with or without vesical irritability, is not a green light, a go ahead signal to orally medicate; nor is it a yellow light of caution, designating watchful waiting; it is a red light indicating possible danger ahead if it is not immediately heeded. Hematuria, no matter in what age group, indicates immediate investigation to determine its origin in the urinary tract and the nature of the lesion. It is sad that, with the facilities of exact diagnosis at our disposal, these avenues of investigation so often are utilized late rather than immediately.—*Dr Henry Kammandel, Carcinoma of the Bladder, Nebraska M. J., June* 1952.

ORIGINAL ARTICLES

The Treatment of Surgical Shock

Arkell M. Vaughn, M.D.
Chicago

The surgeon ordinarily tries to prevent shock rather than to treat it. Usually he is successful. But the delicate, serious operations that today's surgeon performs make shock sometimes inevitable. Therefore, he must be prepared to treat it.

In preventing or treating shock, the surgeon must try to prevent or correct altered physiology. His preventive treatment must include several things: Sufficient pre-operative hospitalization, correction of secondary anemia and hypovolemia (chronic shock) and fluid balance, use of vitamins, determination of serum protein, and gentle handling of tissues. When the surgeon does encounter shock, he can use empiric and specific treatment. Those are the points this paper will cover.

Presented before the Postgraduate Conference of the Illinois State Medical Society at Elks Club, Springfield, Ill., April 3, 1952.

From the Department of Surgery, Stritch School of Medicine of Loyola University, Mercy and Cook County Hospitals.

The preventive treatment of shock must include the following:

1. *Pre-operative hospitalization* of the patient long enough that his surgeon can prepare him for surgery unless, of course, an acute emergency exists. If the surgeon anticipates a prolonged or extended operation, he should not send in the patient on one day for surgery the next.

2. *Secondary anemia and hypovolemia (chronic shock)* should be corrected. A patient whose erythrocyte count is below 4,000,000 per cubic millimeter and whose hemoglobin is below 70 per cent should receive sufficient blood transfusion, to elevate the erythrocyte count at least to this level. The transfusions will also build up blood volume.

3. *Fluid balance*

(a) A daily urinary output of 1,000 to 1,500 c.c. is desirable. To rectify dehydration, give the patient infusions of 1,500 to 3,000 c.c. of suitable fluids, daily, besides that taken orally, to bring the urinary output to the desired amount.

(b) Correction of blood electrolytes especially sodium and potassium. Circulating blood chloride level determinations are desirable; and if low, physiological saline or Ringer's solution *infusions are indicated.*

This pre-operative administration of saline is *not to be confused with postoperative administration.* Administration of salt one or two days after surgery, Coller and associates have shown may detrimentally cause an obliguria.

More recently, Rosoff and Walter have experimentally produced "hemoglobinuria nephrosis" or "lower nephron nephrosis" in dogs. *Renal anoxia resulting from hemorrhagic shock,* combined with a hemoglobin compound in the blood, will produce "lower nephron nephrosis" in the kidney. Cole said recently, "Since we adopted the policy six years ago of giving very little or no sodium chloride during the first forty-eight hours after operation, we have seen only one case of oliguria."

4. *Vitamins.*—Three vitamins are especially valuable in the surgical patient, namely: Vitamin B. group which aids in carbohydrate metabolism; vitamin C (ascorbic acid) 150-300 mg. (either parenterally or orally). This vitamin helps wound healing. Vitamin K orally with bile salts or parenterally. Prothrombin response to vitamin K administration is a good liver function test.

5. *Serum protein determination.*—If possible, the surgeon should not perform extensive surgery on patients with serum protein concentration of less than 6 gm. per cent. He should give daily plasma transfusions of 500 c.c. to 1,000 c.c. along with blood transfusions of 500 c.c. to 1,000 c.c. until he corrects hypoprotenemia. He may give protein hydrolasates in the form of amigen, aminosol, parenamine or similar preparations, but the response to them is slow.

6. *Hemostasis and gentle handling of the tissues* is essential in prevention of shock. Tissue trauma can produce shock as well as hemorrhage. Blood loss, as determined by the amount of blood in sponges and linens is usually much greater than the surgeon estimates. Wangensteen found that patients lost 300 c.c. to 500 c.c. during gastrectomies. Bexton and White found 700 c.c to 1,000 c.c. lost during major thoracic procedures. Coller and associates found an average of 410 c.c. lost for combined abdominoperineal resections and 600 c.c. for complicated gastric resections. The surgeon can roughly estimate the blood loss for a given operative procedure. At the start of the operation he can *start a transfusion of blood of a like amount* to prevent shock by keeping the patient in *blood balance.*

7. Anesthesias, wisely selected, and given as they generally are today, have greatly reduced the incidence of shock.

8. *Adrenal cortical extract.*—Several years ago Cole showed that adrenal cortical extract has clinical value, but its use is still controversial.

So much for preventive measures. But sometimes the surgeon unavoidably encounters shock. His treatment of it can come under two heads, empiric and specific.

I. *Empiric treatment* includes the following:

A. Rest
B. Warmth
C. Elevation of the feet
D. Tight bandaging of the extremities
E. Administration of sedatives
F. Stimulants
G. Vasospastics.

Rest as in all pathologic conditions is essential. *Sedatives* in the form of narcotics or the barbiturates may be necessary. For shock due to head injuries, the barbiturates are preferable to narcotics because they do not depress the vital centers too markedly. *Warmth* although necessary should not be extreme. A marked rise in the temperature of the tissues, as Blalock has demonstrated, is accompanied by vasodilatation, with an increase in capillary permeability. Blalock says, "probably extreme degrees of heat should not be used even locally in the treatment of shock, particularly if means are not immediately available for increasing the blood volume by the introduction of blood or a suitable substitute." Patients exposed to cold and dampness should be placed in a warm bed and covered with blankets only and not with hot water bottles. The animals in Blalock's experiments showed that the average survival period in the group in which cold was applied was twice that of the group in which an elevation of body temperature was produced by the the local application of heat. *Elevation of the feet* or lowering of the head allows more blood to reach the respiratory center. *Tight bandaging of the extremities,* a time honored remedy, prob-

ably decreases the vascular bed and increases the blood volume to the vital centers. Bandaging may also prevent "white" hemorrhage or plasma loss through the capillaries in the extremities. Koch and Allen use pressure bandages in severe burn cases because they believe the pressure prevents further fluid loss into the tissues. *Stimulants* should not be used too intensively, especially in shock due to hemorrhage, since they may increase the hemorrhage. Warm coffee or whiskey is permissible if the patient is conscious. *Vasospastics* are merely symptomatic therapeutic agents; if used too freely they may actually be harmful. Freeman and others have shown that epinephrine alone will cause shock.

II. *Specific treatment* includes use of the following:

A. Whole blood
B. Plasma or serum
C. Oxygen
D. Crystalloids
   1. Dextrose
   2. Sodium chloride
   3. Ringer's solution
   4. Hartmann's solution
E. L-Arterenol or L-nor-epinephrine*

A. *Whole blood.*—Crile in 1909 stated, in his book on *Hemorrhage and Transfusions,* that "Transfusion is a better form of treatment for shock alone, or combined hemorrhage and shock than any other known form of treatment. The blood pressure is raised; it is better sustained than by other fluids, and the rapidly occurring improvement is greater than that obtained by the use of fluid, other than blood." This statement made 43 years ago still holds. There is no perfect substitute for blood in hemorrhage or shock. Blood can be given from 500 c.c. up to 6,000 c.c., depending upon the requirement, and can be given rapidly if necessary.

Sam F. Seeley, Brigadier General in the Medical Corps, and others in the March 1952 issue of *International Abstract of Surgery* give a collective review of intra-arterial transfusions. They are most commonly administered in the radial and the common femoral arteries. Seeley and his co-workers say, "Arterial blood transfusion can almost immediately restore to normal three fundamental abnormalities in the shock state:

"(1) Depleted blood volume
"(2) Reduced arterial pressure, and
"(3) Inadequate tissue perfusion."

This arterial transfusion, I think is worth comment in the treatment of surgical shock.

B. *Plasma or serum transfusions,* in an emergency can be given while the patient is being typed and cross matched for blood transfusion.

For shock caused by burns, plasma transfusions are better than blood transfusions. The reason is that such shock is accompanied by a hemo-concentration due to loss of plasma from the capillaries. This condition is the so-called "white hemorrhage" to distinguish it from "red hemorrhage" which is the loss of whole blood either outside the body or within the body cavities.

C. *Oxygen* can be given through a nasal catheter, a mask, or within a tent. Since there is a tissue anoxia which also affects the liver, oxygen will help to alleviate the deficit.

D. *The crystalloids,* which are commonly given, may prevent dehydration; but as Beard and Blalock have shown, they actually may do more harm than good unless supplemented by blood, plasma or serum. For if there is not adequate plasma protein in the blood stream, they diffuse out through the permeable capillary bed. In hemorrhage, unless bleeding has already been arrested, the crystalloids may increase the blood loss and may also wash proteins into the tissue.

E. *L-Arterenol* is sometimes referred to as L-nor-epinephrine. It is a primary amine, which differs from epinephrine by the absence of a methyl group on the nitrogen atom. L-Arterenol solution 1:1000 comes in 4 c.c. ampoules and must be diluted. Four (4) c.c. L-Arterenol 1:1000 solution is added to 1000 c.c. of isotonic sodium chloride solution of five per cent dextrose solution of plasma or of whole blood. Each 1 c.c. of this dilution contains 4 micrograms of L-Arterenol base. This dilution is given intravenously through a calibrated Murphy-drip bulb, which permits an accurate estimate of the rate of flow in drops per minute. Although there are individual variations, the average dose to maintain the desired level of blood pressure ranges from two to four micrograms (0.5 to 1 c.c. of dilution) per minute.

The blood pressure should be checked every

*Levophed (Winthrop-Stearns)

two minutes from the time the drug is started until the desired blood pressure is obtained, then every five minutes if the drug is to be continued. The rate of flow must be watched constantly; while receiving the drug the patient should never be left unattended.

Here is an example of the use of L-Arterenol. Recently I performed an extensive resection of the stomach for carcinoma at the pylorus. The operation involved removal of the greater omentum, the gastrohepatic omentum, the gastrosplenic omentum and spleen, the coeliac and adjacent lymph glands. During the resection troublesome and severe hemorrhage occurred from the tail of the pancreas. Despite massive blood transfusions the blood pressure became inaudible. L-Arterenol was started at 120 drops a minute. The blood pressure was first heard at 70 mm. systolic. It continued to rise until it reached 94 mm. L-Arterenol was discontinued. Very soon the blood pressure dropped to 60 mm. L-Arterenol was started again at 120 drops a minute. When the blood pressure was 100 mm. L-Arterenol was reduced to 40 to 60 drops a minute. The blood pressure remained at 90 mm. for the remainder of the operation. Post-operative, it rose to 130 mm. and remained stable thereafter.

In conclusion, then, the surgeon must always try to prevent shock. If it does occur, he may use empiric treatment, which includes rest, warmth, elevation of feet, tight bandaging of the extremities, use of sedatives, stimulants and vasospastics, and specific treatment which consists mainly of liberal blood transfusions supplemented by plasma, oxygen, the crystalloids and drugs.

1180 E. 63rd Street & 30 N. Michigan

Rehabilitation — Prescription for Living

Hart E. Van Riper, M.D.
New York

Having been born in Illinois, and having practiced medicine in Wisconsin, I do have many friends in Illinois. On my arrival here this morning many of them said, "Tell us why you, a pediatrician, have been invited to give the medical oration at this meeting."

I gave them a very frank answer; I didn't know. Perhaps it was because your lovable secretary and I have carried on a correspondence over recent years in the matter of what to do for the disabled.

I am sure that the medical oration is expected to be either very philosophical or especially scientific. I dislike to disillusion you, but the address of mine this afternoon shall be neither philosophical nor scientific, but primarily social. I hope to present to you something of our responsibilities to patients after they are discharged from definitive medical care.

Oration in medicine, 112th Annual Meeting, May 14, 1952, Chicago.

Many good causes have progressed or failed because of the name. Most assuredly, the name "Rehabilitation" has, I believe, been more of a discredit to the thing we are talking about than a credit. To both the professional and the lay person the term "Rehabilitation" means anything but what we consider it should mean. For instance, in the New York area many of those who expect an atomic bomb attack are rehabilitating the farmsteads of their ancestors in the New England states; a refuge in time of atomic warfare. Mr. Rockefeller has derived great satisfaction from the rehabilitation of historic Williamsburg; and all of us are paying taxes for the rehabilitation of war-devastated Europe and the East.

But what do we mean by rehabilitation when we are talking in a scientific way? In spite of many lacks in the definition, I do believe the one that best describes this process of human salvage is generally accredited to Dr. Howard

Rusk — "The restoration of the handicapped to the fullest physical, mental, social, vocational and economic usefulness of which they are capable."

What is the problem of the physically handicapped? It is variously estimated that there are in this country today more than two million individuals who, with proper care and with the intelligent bringing to bear of all disciplines that are known and available, could be made useful and productive members of society. What is equally important is the estimate that there are added to this large number of disabled or handicapped individuals, approximately a quarter of a million new handicapped persons a year. These include those individuals who are born with congenital defects, such as those demonstrated here this afternoon, and those who are handicapped through accident or illness.

The latest reports of the Office of Vocational Rehabilitation would indicate that in 1951 somewhere near 66,000 individuals with handicaps were given some form of rehabilitation and returned at least to some usefulness, even though it is not said that they were returned to their full potential productivity.

Why, as Medical Director of the National Foundation, should I in that organization have an interest in rehabilitation? I hate to recite figures, but sometimes one has to use them. I am sure that you realize that the incidence of poliomyelitis has markedly increased over the last few years. In fact, there have been as many cases of poliomyelitis in the last four years as there were in the previous decade. The average number of reported cases has been approximately 30,000 a year. In spite of better definitive treatment during the early stages of this disease we find that about 20 per cent of poliomyelitis cases are left with some permanent physical handicap. So that with a total of 28,000 cases reported in 1951, there were 5,600 individuals who were left with some permanent physical disability.

The first speaker at this afternoon's session showed to you some of the end results of paralytic poliomyelitis. I do not believe that today we see the extreme deformities that were demonstrated on the lantern slides, because better care is available during the early course of the disease; contractures are not permitted to develop and these patients are not left so severely handicapped. But even so, poliomyelitis, so far as I know, constitutes the single greatest cause of visible deformity as reported from crippled children's registries in our states under the Federal Security Agency.

There is another reason for the National Foundation being interested in this big program of rehabilitation of the physically handicapped. We had a rather accurate census last year of hospital admissions and discharges of poliomyelitis patients and found that over 15 per cent of the cases that were hospitalized remained in the hospital for more than ninety days. Mith the average cost of hospitalization at $14.00 a day this represented a daily expenditure of monies in the approximate amount of $60,000. This money came from the National Foundation for Infantile Paralysis, from insurance funds, from public agencies and from the families' own financial resources. During this period of hospitalization, again may I say that with good physical therapy, patients received adequate treatment, but many of them in that ninety day period received little if any attention toward their future possibilities to regain their capacity for more nearly normal living.

What, generally, are we doing with the severely physically handicapped today? Except in those few communities that have established rehabilitation centers, most of those persons are prisoners of their handicaps. May I digress just for a moment to tell you of a survey conducted in New York City. There were taken at random 100 patients who had had poliomyelitis five years prior to the review. All these patients were either in sheltered workshops, homebound, in schools for crippled children, or in institutions for the physically disabled. A careful survey and evaluation of each individual patient were undertaken, with complete social studies, psychological studies, job counselling, and vocational guidance. It was found that after a period of intensive training, better than 90 per cent of those individuals could be made self-supporting. That in itself represents a considerable economic saving to the community and to the nation.

There is another factor which we must consider when we think of the disabled person in the sheltered workshop or homebound. We are in those instances exaggerating the individual's disability, rather than considering those assets

that remain to that individual, which have not been injured by his disease or his illness, and which leave him as capable of carrying on as normal an existence as before his accident or illness.

At this point I would like to give just a little case history: This was a lawyer, 32 years of age, who had practiced in an office of one of the large oil companies of the south-west. He had contracted poliomyelitis with severe involvement of all four extremities and his trunk muscles, and was in a respirator for some period of time. Following acute hospitalization with minimal recovery, he was shunted from one institution to another until he landed in New York at the Home for Incurables. Mentally, this man was as keen if not keener than he was at the time of his original illness. Yet here he was put away in a Home for Incurables to live out the rest of the days of his life.

It was only because of the missionary spirit and the interest of a few individuals that this young lawyer was brought into the New York University-Bellevue Rehabilitation Institute. Here he was given a complete and total course of rehabilitation, and today he is practicing law in the city of New York. He is making a living, supporting his family, and is as happy an individual as you will ever want to meet.

I could cite many similar examples as well as an extreme case. For instance, I was visiting a so-called rehabilitation center in the middle west, not in Chicago, and I saw an attractive 12 year old red-headed girl who was walking around without any apparent disability. I said to the physician in charge, "What are you doing for her?" "Well, she is being rehabilitated," he replied. I said, "Rehabilitated. In what way?" "She is unable to extend her great toe on her right foot," was his response. She had been under treatment four times a week for a year to bring back the extensor of her great toe! Those are the extremes that we must face.

I recall the early days of the National Foundation when we were interested in securing more hospitalization for more acute polios, and through the co-operation of the American Hospital Association and the American Medical Association, we inquired, in the annual survey of hospitals, as to the number that had physical therapy departments. It was surprising to find out that 90 per cent of the hospitals that answered the inquiry said that they had departments of physical therapy. On visiting those hospitals that had reported such, we found that any hospital that had a diathermy machine or an ultraviolet lamp, even though it might be stored away in some cupboard which was completely inaccessible, considered itself to have a department of physical therapy.

Now we are finding that much the same prevails as to rehabilitation. Your patients, and those patients that are being paid for by chapters of the National Foundation, are today paying for rehabilitation in many hospitals, and what they are paying for is nothing more than a little bit of physical therapy, approximately one-half hour a day.

What is rehabilitation? Very frankly, there are only a few institutions today that have a complete program of rehabilitation, and rehabilitation begins the day the patient enters the hospital, not the day he is ready to leave. Who should set up a department of rehabilitation? It makes little difference whether it is the orthopedic surgeon, the general surgeon, the internist, the neurologist, the pediatrician, or the physiatrist. The only thing that makes a difference is that there should be some responsible director of the service who is, above all else, a good physician. And by a good physician I mean that individual who is aware of all of the social complications that come with disease and injury.

Rehabilitation today requires the surgeon to correct those deformities that must be corrected mechanically. It requires also the internist, who looks at that patient as an individual and attempts to treat those conditions that can be corrected through good medical care. It consists of the neurologist and the psychiatrist or the psychologist, who must motivate these patients, make these patients want to live and to utilize all that they have left. And of course it requires the physical therapist, the occupational therapist, the medical social worker, and all of the ancillary groups who can contribute so much to this program of total recovery.

Above all else, rehabilitation is not a program of a half hour a day. It is an eight hour day and it goes on to five or six or even seven days a week. If any of you have had an opportunity to visit the Rehabilitation Center in New York, to which I have already referred, you will find

that the patients there put in a full day's work.

A rehabilitation center must have some living-in facilities, for there are many patients to whose home we cannot take the service, who are so badly disabled that they cannot possibly transport themselves or be transported from home to the institution. Sheltered workshops are not rehabilitation centers although the patient is brought there to spend the day. During that day, he has work to keep himself occupied. But in a true rehabilitation center it is work that is spent in trying to make that individual able to carry on for himself.

I am sure all of you have heard of the chart "The Elements of Daily Living." In other words, the patient that cannot get from his bed to his wheelchair, or from his wheelchair to his bed, can never hope to be able to do something for himself; he must be carried and lifted. All the things such as dressing and combing the hair, those are the small but essential items of daily living. It is necessary to evaluate patients in terms of what elements of daily living they can do for themselves and then set out doing what you can to correct those deficiences to the point where they can act and do for themselves.

For too long a time we have looked upon the disabled with pity and have remarked on their inability to walk, or their inability to use their hands, and have failed to recognize that mentally they are as alert and keen as ever. In fact, many of the disabled who have lost some of their faculties seem to have developed the others even to a greater point of acuity than we would normally expect.

Job counselling and placement are exceedingly important. It brings up the point of what should the community do towards the development of a rehabilitation center.

I am strongly of the opinion that there should be, even in the city of Chicago, not a rehabilitation center at each medical school but rather one center of rehabilitation that would have the co-operation of the other medical centers in the Chicago area. Why is that so important? Because industries become somewhat confused and bewildered and annoyed by the numbers of people who ask them to co-operate in various worthwhile projects. As an example of what can be done in this regard, every industry in New York is surveyed by a job counsellor from the Institute of Rehabilitation to determine what positions in that industry could be held by a handicapped individual. The person who will have to get around and work from a wheelchair — what can he do? What can the individual do who has one or both arms incapacitated? And so on down the line. And there is kept on file the number of jobs the physically handicapped can do. When a man is trained and the vocational counsellor deems that he can do such and such work, and he is trained for that work, there is only one contact made with that manufacturer or industry or business, and the man or woman is placed there. This avoids much of the confusion, much of the duplication, and results in better job placement for the physically handicapped.

What is the cost of a good rehabilitation program? Let me disillusion you if you think it is cheap; it is not cheap, for it requires many hands to work with and do for these patients during this period of relearning to live. With the average cost of acute hospital care in the New York area approaching $20.00 a day, the cost of rehabilitation at the New York Rehabilitation Institute is approximately $32.00 a day. Yet economically the results of utilizing such a rehabilitation program for city welfare cases in New York has resulted in a decrease in total hospitalization of patients so that the city is willing to pay this additional $12.00 a day. In the end, more patients are discharged from the hospitals, off the welfare rolls and gainfully employed in their own or some other profession or business which has been deemed best suited for them.

There is another problem that we are all facing today in this matter of the chronically disabled. With increasing taxes and costs of living, a recent survey in one of the eastern communities, not New York, has shown that more and more of the aged and the disabled are being transferred to welfare rolls, not because the family has not the continued love and interest in their parents or their brothers and sisters, but the cost of living and the taxes they must pay each year, does not enable them to support the chronically disabled. So that in the end, government as well as voluntary agencies would do well to think more and more of returning the physically handicapped to a gainful place in life.

The psychological impact of this program is tremendous. May I say to any of you, should

you have an opportunity to visit Dr. Rusk's Institute in New York, it is more than worth your while. Yes, it is an elaborate and expensive program. It could be duplicated, certainly in the larger cities such as Chicago. And you who come from the rural areas, and Illinois has many rural areas, ask what can be done in our smaller communities? Much can be done in the small community, but certainly those chronically disabled persons in your own community could be transferred to Chicago or to other large metropolitan areas, and receive the benefits of what we today know is available to patients. If there is a will, there will be a way to provide it for them.

In conclusion may I say, as physicians we must center our attention on the restoration of man, God's greatest creation, to as near a state of mental, physical and social normalcy as is consistent with the patient's potentialities.

Jaundice

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Jaundice always presents a perplexing problem in diagnosis. It is essential to bear in mind that jaundice is a finding that may be associated with many and varied causes. For purposes of classification, jaundice may be divided into three large groups, namely, extrahepatic or hemolytic jaundice, intrahepatic or hepatocellular jaundice and extrahepatic or obstructive jaundice.

Prehepatic Jaundice.—Prehepatic or hemolytic jaundice results from an over-production of bilirubin due to an excessive destruction of erytrocytes by the reticuloendothelial system throughout the body. This type of jaundice is not primarily associated with liver disease. Destruction of erythrocytes may be due to external environmental factors or to inherent defects within the cell itself. Among the factors acting from without are various types of immune agglutinins or hemolysins such as those operative in transfusion recations, bacterial, physical and chemical agents and certain disease entities such as the leukemias. Hemolytic conditions associated with defective erythrocytes include familial or congenital hemolytic jaundice, sickle cell anemia, and erythroblastosis.

The symptoms and findings associated with prehepatic jaundice depend on the etiologic agent, the speed of destruction of red cells and the amount of liberated hemoglobin that is transformed into bile pigment. Prehepatic jaundice may thus appear as a mild transitory episode, as a chronic protracted illness, or as a very acute crisis in the course of certain long standing hemolytic diseases.

There are certain variable but constant features of extrahepatic jaundice. Blood bilirubin is elevated and if sufficiently high overt jaundice occurs. Since the circulating serum bilirubin has never passed through the liver cells, it exists as bilirubin-globin. This type of bile pigment gives an indirect reaction with Van den Bergh reagents and fails to pass through the kidneys into the urine. Large quantities of bile will reach the bowel where the bilirubin will be changed to urobilinogen. The stools will assume a darker color than normal and their twenty-four hour urobilinogen content may exceed 3000 mgm. Because of the large amount of urobilinogen absorbed from the bowel, the liver will be unable to handle it and

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the excess will be excreted by way of the kidneys. Consequently the twenty-four hour urinary urobilinogen will be increased and may exceed 300 mgm.

Anemia with a variable degree of reduction in erythrocytes and hemoglobin is a constant finding. The extent of the anemia depends on the intensity and duration of the hemolytic process or the type and degree of impairment or abnormality of the erythrocytes. Peripheral blood smears reveal increased reticulocytes often up to 25 per cent, nucleated red cells, alterations in size and shape of erythrocytes and a mild to moderate leukocytosis.

Because of the increased destruction of circulating erythrocytes, the bone marrow is stimulated to increased activity. It becomes hyperplastic and shows a marked increase in the number of erythrocytic elements, particularly normoblasts. The myelocytic elements and megakaryocytes also reveal evidence of increased activity.

As a consequence of the increased destruction of erythrocytes, extrahepatic jaundice is associated with an enlarged spleen. The degree of splenomegaly depends largely on the duration of the disease. In acute hemolytic episodes, the spleen may be only moderately enlarged. Very large spleens are encountered in those chronic conditions associated with defective erythrocytes.

Intrahepatic Jaundice.—Intrahepatic jaundice is by far the most common type. It results from alterations in the liver parenchymal cells or from disease involving the intrahepatic biliary channels. When the liver cell is primarily at fault, the jaundice is referred to as hepatocellular jaundice. Intrahepatic biliary tract disease is associated with jaundice in such conditions as cholangitis, chronic biliary cirrhosis and cholangiolytic cirrhosis.

Hepatocellular disease accounts for the majority of cases of intrahepatic jaundice. The pathology presented in this type of jaundice varies remarkably. Thus there may be severe necrosis of liver cells with almost complete loss of normal liver architecture. This is seen in acute yellow atrophy and in severe types of toxic or viral hepatitis. There may be focal areas of necrosis, histiocytic infiltration, liver cell atrophy and regeneration, and bile duct proliferation. Fatty changes may be prominent in certain stages of parenchymal damage particularly in dietary or alcoholic types of cirrhosis. As a sequela to fatty infiltration proliferation of the periportal fibrous tissue and intralobular connective tissue becomes increasingly manifest. This tends to distort the liver architecture causing atrophy of liver cells by pressure and interference with the blood supply. Biliary canaliculi become disrupted, blocked and permeable to bile so that bile enters the spaces of Disse from whence it may enter the blood stream. Whether the reaction to a noxious agent is to be one of necrosis or one of less severe cellular damage with fibrosis is to some extent a question of the intensity and duration of exposure. Thus viral hepatitis may present a rapid almost complete necrosis of liver cells or over a long period of time may lead to postnecrotic cirrhosis or possibly to a rather typical portal cirrhosis.

Since in hepatocellular jaundice the liver cells are primarily affected, serious alterations occur in liver functions and other bodily functions remotely affected by the disturbed liver. Bile pigments normally produced by the destruction of erythrocytes cannot be completely excreted by the liver parencshyma. Retention of bilirubin-globin in the blood stream will result. Because of increased permeability of the bile canaliculi regurgitation of bilirubin or posthepatic bile into the blood stream takes place. Blood serum will then reveal an increase in total bilirubin some of which will be regurgitated bilirubin and some retention bilirubin-globin. Van den Bergh reagents will therefore yield both direct and indirect reactions, the intensity of each depending on the relative amounts of bilirubin and bilirubin-globin present in the blood. Because bilirubin, unlike bilirubin-globin is readily permeable through the kidneys, bile pigment will be found in the urine. Icteric staining of the conjunctiva and skin will be manifest early and become more intense as regurgitant bilirubin increases in the blood.

Since some bile usually enters the gastrointestinal tract, the stools will remain dark and contain a measurable but reduced quantity of urobilinogen. If the biliary canaliculi should become completely blocked either because of parenchymal swelling or bile thrombi, the stools may be clay colored and contain little or no urobilinogen. Because the liver cells are unable to excrete the urobilinogen absorbed from the bowel, some will be excreted through the kidneys and the urine will contain moderately in-

creased amounts of urobilinogen.

The liver plays an important role in the metabolism of proteins. It works over the amino acids absorbed from the small intestine into various body proteins. These may be immediately utilized or stored for future use. When the liver cells fail in this function, the body becomes depleted of stored proteins and there results a breakdown of body proteins. The patient then lives in a state of negative nitrogen balance. Loss of weight varying from a few pounds to frank emaciation is an inevitable result of liver cell damage. In order to correct this disturbed protein metabolism, large amounts of protein over a long period of time must be taken. Protein deficiency in liver disease is a factor responsible for such symptoms as weakness and fatiguability.

Serum albumin, fibrinogen and prothrombin are synthesized in the liver. At least some portion of serum globulin is also a product of hepatic activity. With hepato-cellular damage there is an ever increasing failure of the liver to produce serum albumin. This results in a decrease in serum albumin in the circulating blood. Globulins not being affected so much by liver disease remain normal or slightly increased. This leads to a reversal of the albumin globulin ratio. Because the circulating blood has a low content of serum albumin, its osmotic pressure will be decreased. As a consequence of this lowered osmotic pressure, one of the factors operative in the production of ascites and edema becomes effective. Several tests that indirectly reflect the function of the liver are dependent on the low serum albumin. The cephalin-flocculation test is positive when the proportions normally existing between serum globulin and serum albumin are disturbed or when some alteration in serum albumin is manifest. Thymol turbidity tests depend upon alterations in serum albumin, gamma globulin and certain lipids.

Prothrombin and fibrinogen are both synthesized by liver cells. Vitamin K is a necessary component in the synthesis of prothrombin. Since bile is essential for the absorption of vitamin K from the gastrointestinal tract, the amount of vitamin K available for prothrombin synthesis will be quite dependent on the amount of bile entering the gastrointestinal tract. However, even though adequate amounts of vitamin K are absorbed, the functional capacity of the liver cells may be inadequate to produce sufficient amounts of prothrombin. The failure of the hepatic cells to produce sufficient prothrombin and fibrogen seriously menaces the blood clotting mechanism. Under these conditions bleeding from ruptured varices can scarcely be controlled, oozing may occur from capillaries of the gastrointestinal tract and other mucous membranes, purpuric spots may appear in the skin and small hemorrhages may occur in the brain. Vitamin K is frequently ineffective in prothrombin deficiency associated with hepatocellular disease. Transfusions of whole blood are often necessary to replace prothrombin, fibrinogen and erythrocytes. In severe liver damage with anemia and disturbed clotting mechanisms, cerebral anoxia, edema and small focal hemorrhages may produce evidences of cerebral irritation or depression. Anoxia also increases general capillary permeability and favors the formation of aacites and edema.

Hepatocellular damage even without hemorrhage is usually associated with anemia. Because of a notorious lack of appetite and disturbed gastrointestinal function, the food and iron intake is usually substandard. This leads to a hypochromic iron deficiency anemia. Particularly in cirrhosis of the liver a macrocytic anemia may be present. A well balanced diet and iron therapy are indicated in hypochromic iron deficiency anemia. Liver extract or vitamin B_{12} should be tried when macrocytosis is prominent. Blood transfusions may often be life saving.

The liver plays an important role in the metabolism of fat. Phospholipids, cholestrol, and neutral fat are processed in the liver either for storage or consumption. When glucose is not readily available fat accumulates in the liver. A glycogen filled liver will harbor little fat—a glycogen depleted liver will soon become a fatty liver. Dietary deficiencies alone or in combination with certain toxic substances result in fatty infiltration of the liver. Experimentally in animals fatty infiltration can be prevented by supplying certain lipotropic substances. These include lecithin, choline, and methionine and they all depend for their effect on the presence in their molecule of available methyl groups.

Portal cirrhosis probably always begins as a fatty infiltration and may remain in this state for a long period of time. The liver will be en-

larged, firm and smooth. Fortunately fatty changes are often reversible. Removal of noxious agents and ingestion of an adequate diet are the most important factors in bringing about the reversal of fatty infiltration. Lipotropic substances, so encouraging in the experimental animal, seem to have little value in the treatment of fatty livers in man. Large quantities of oral or parenteral glucose sustain the liver as well as the individual until some of the fat can be removed and the hepatic cells regain their functions. Continued presence of excessive amounts of fat in the liver cells acts as a stimulant to the development of fibroblastic tissue, cellular infiltration and ductal proliferation. The liver becomes hard, irregular and nodular. Gradually it decreases in size and finally may creep beneath the costal margin. As this cirrhotic or fibroblastic process increases, there gradually develops an interference with the portal circulation. Intrahepatic blood flow is impeded by the contracting fibroblastic tissue, by the disturbed architecture of the liver and by the abortive attempts at liver regeneration. The immediate result of the disturbed hepatic blood flow is to produce a portal hypertension. Consequent to the portal hypertension, anastomotic channels between the portal and general venous circulation develop and ascitic fluid tends to accumulate. Varices and collateral circulation will form in the esophagus, stomach, hemorrhoidal vessels, subperitoneal vessels and over the chest and abdomen. Rupture of one of these large anastomotic vessels is always a threat to life in the patient with cirrhosis of the liver.

Cholesterol exists in the body in the form of free cholesterol and cholesterol esters. The esterification of cholesterol is a function of the liver cell and normally the relationship of cholesterol esters to total cholesterol is quite fixed. In hepatocellular disease the cholesterol esters decrease roughly in proportion to the degree of parenchymal damage. In hepatocellular disease, therefore, the total serum cholesterol may remain within normal limits whereas the cholesterol esters may gradually decrease. Decreasing serum cholesterol ester values have a grave prognostic import. Conversely, increasing values for serum cholesterol esters is an encouraging sign.

One of the functions of liver parenchyma is the destruction or inactivation of certain endocrine products, particularly the estrogens produced in the male and the antidiuretic hormone produced by the posterior pituitary. In hepatocellular disease, these hormones tend to accumulate. Evidences, particularly in the male, of increased blood levels of estrogenic hormones include the presence of spider nevi, the reddened palms, the gynecomastia and testicular atrophy commonly seen in severe hepatocellular damage. Failure of the liver to destroy the pituitary antidiuretic hormone decreases renal sodium and water loss, thereby favoring the formation of ascites and edema.

The part played by the adrenal gland in favoring sodium retention is difficult to determine. That sodium retention does occur is a fact and this sodium rentention is perhaps the principal factor responsible for ascites and edema. Rigid salt restriction must be conscientiously and consistently followed if patients with hepatocellular disease are to be dehydrated and cleared of their ascites and edema. Mercurials may be employed as an adjunctive therapy to facilitate the elimination of fluid. No form of therapy aimed at reducing ascites and edema will be effective without adequate salt reduction in the diet.

Vitamin deficiencies either resulting from failure of absorption, decreased storage or inactivity are present. When bile is absent or decreased in the intestinal tract, absorption of the fat soluble vitamins A, D, E and K is interfered with. Phosphorylation of thiamin and methylation of nicotinic acid are functions of the liver that become inadequate in parenchymal disease. Storage of riboflavin is reduced in liver damage. Vascular dilatation over the nose and in the conjuctiva, together with cheilitis encountered in liver disease are in part at least due to vitamin B deficiency. Experimentally, vitamin E has been found effective in protecting the liver against the necrotic effects of certain toxins. Multiple vitamin therapy is therefore indicated in most types of liver disease.

Hepatocellular pathology ultimately becomes associated with changes in the spleen. Depending upon the extent and type of involvement, the spleen enlarges and can be palpated in a relatively large number of cases.

Extrahepatic Jaundice.—Obstructive jaundice can be divided into extrahepatic and intrahepatic types based on the location of the obstructing pathology. In general, the extrahepatic obstruc-

tions make up the group of cases commonly referred to under the term of surgical jaundice. The intrahepatic biliary obstructions may involve the large intrahepatic bile ducts or the small bile canaliculi. Cholangitis is an example of acute involvement of the large intrahepatic bile ducts. It usually represents an ascending infection from extrahepatic biliary structures. Chills, fever, jaundice and a painful liver occurring in a patient with known gallbladder disease or a common duct lesion strongly suggests cholangitis. Long standing cholangitis and pericholangitis becomes associated with periportal fibrosis and passes into a chronic biliary cirrhosis. This is characterized by a deep greenish jaundice, moderately enlarged liver and periodic bouts of fever. Occasionally the very small bile canaliculi are mainly involved and then the condition is called cholangiolytic cirrhosis. This condition may be extremely difficult to differentiate from extraheptic obstructive lesions.

Irrespective of the location of the biliary obstruction, certain rather characteristic laboratory findings result. Bile pigment that has passed through the liver cells regurgitates into the spaces of Disse and ultimately reaches the blood stream. This causes a gradually increasing serum bilirubin of the type that yields a direct Van den Bergh reaction. The skin and conjunctiva become icteric and the urine becomes dark due to excessive quantities of bilirubin. Depending on the degree of biliary tract obstruction, the duodenum will contain little or no bile and the stool will show a small amount or no urobilinogen. Based on the amount of urobilinogen present in the stool, the urine will also contain little or no urobilinogen. Complete absence of urobilinogen in the stool and urine is evidence of complete biliary obstruction. Small amounts of urobilinogen in the stool and urine indicates an incomplete obstruction whereas varying amounts point to an intermittent type of obstruction.

Cholesterol and phosphatase enzyme are normally excreted into the bile. Consequently in obstructive types of jaundice the blood concentration of these substances increases. The normal relationship between total cholesterol and cholesterol esters tends to be maintained.

Tests for hepatocellular damage in early obstructive lesions are normal or only deviate slightly from the normal. However, if the obstruction persists sufficiently long, hepatocellular changes occur.

An attempt has been made to correlate the physiologic changes present in jaundice with some of the symptoms, physical findings and laboratory tests. If the impression has been given that the clinical picture and laboratory findings in liver diseases are distinctive and easily delineated, a grave error has been committed. Because of the mixed types of jaundice that so often present themselves, the symptoms, findings and laboratory results may be bizarre and conflicting. It is only by careful consideration of the history, findings and disturbed liver functions that a correct diagnosis can be hoped for.

30 N. Michigan Avenue

THE FASTING BLOOD SUGAR

The onset of diabetes in the elderly person is likely to be insidious and the disorder may go unrecognized for long periods. Few cases will be missed if physicians adopt the practice of examining, for sugar content, samples of blood and of urine obtained two hours after a normal meal in every patient who is, or has been, obese or who gives a family history of diabetes or who has knowledge of having had glycosuria in the past. The practice of using the fasting blood sugar for the routine detection of diabetes should be abandoned. *Garfield G. Duncan, M.D., Clinical Highlights In The Elderly Diabetic, Philadelphia Med. Aug. 9, 1952.*

Surgical Aspects of Jaundice

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The surgical aspect of jaundice, as the phrase implies, refers principally to that group of patients who have lesions producing mechanical obstruction to the normal flow of bile in the extrahepatic biliary channels. These lesions may be intra-luminal such as calculi, strictures (congenital or acquired) or neoplasms; or they may be extra-luminal such as pancreatitis, carcinoma of the head of the pancreas or duodenum or other adjacent conditions causing extrinsic pressure upon the bile channels. Any or all of these lesions create a condition designated as "obstructive jaundice" in contrast to non-obstructive jaundice or the hepato-cellular type of jaundice. It is estimated that the number of patients with jaundice are about evenly divided between the obstructive and non-obstructive types. Therefore in the consideration of the surgical aspects of jaundice it is most important that these two types be differentiated to avoid unnecessary surgery in patients who are generally poor surgical risks.

A clinical or pre-operative diagnosis of obstructive jaundice can for the most part be made on the basis of a good clinical history, a careful physical examination, x-ray studies and with the aid of the several more commonly known liver function tests. In spite of these seemingly adequate facilities, there does, however, remain a small group of patients with jaundice whose pre-operative diagnosis cannot be made whether obstructive or non-obstructive. Under such conditions an unproven unobstructive jaundice takes on a surgical aspect if for no other reason than for the purpose of diagnosis. This group consists largely of those patients with viral or infectious hepatitis in which there is extensive involvement of all the different liver structures. This renders some of the more or less diagnostic liver function tests relatively inconclusive. Therefore exploratory laparotomy under such conditions becomes necessary. Such an exploratory laparotomy necessarily need not be in vain because the jaundice could still be on an obstructive basis. If the cause proves to be of a non-obstructive character, then the words of Moynihan become appropriate namely, "no man is infallible in the diagnosis of jaundice."

There is a third group of patients, however, with jaundice that come to surgery. This group consists of such patients who are jaundiced regardless of the cause and develop surgical conditions unrelated to any biliary tract disease. These conditions are for the most part emergency, such as acute appendicitis, perforated ulcer, and intestinal obstruction.

When a diagnosis of obstructive jaundice has been made, the next problem is to determine if possible the cause of the obstruction. If this can be done, we can plan a far more effective surgical approach. For example, the surgical approach to the removal of a gall stone from the common bile duct is far more simple than the surgical approach to the removal of a carcinoma of the head of the pancreas. However, regardless of the cause of the obstructive jaundice any surgical intervention constitutes a serious procedure.

In considering the overall treatment of obstructive jaundice, it seems that too much emphasis, probably, has been placed upon the actual technical procedure devised to relieve the patient of his difficulty, and too little emphasis placed upon the preventive measures designed to guard the anatomic integrity of the extrahepatic bile passages. It is true that we have no preventive measures against obstructive jaundice as far as congenital atresias, stones, inflammations and neoplasms in the common bile duct are concerned, but the obstructive jaundice due to mechanical strictures from previous gall bladder surgery can be largely if not entirely avoided by using proper

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precautionary measures in the first place in avoiding injury to the bile channels. It is common knowledge that 70 to 90% of patients requiring common bile duct reconstruction have had previous gall bladder surgery at which time injury of one type or other was inflicted upon the common or hepatic bile ducts. This can easily occur when the surgeon regardless of his ability is in too great a hurry, becomes careless, or the operation in itself presents technical difficulties. Another factor contributing to such injury is the routine exploration of the common bile duct in all gall bladder operations as recommended by some. It is our firm conviction that such teaching is unsound—and that any exploration of the common bile duct should be restricted to certain standard indications that need not be mentioned here. There is no question that routine exploration of the common bile duct results in a certain number of unjustifiable common duct strictures.

However, in our experience the majority of common bile duct injuries are the direct result of the operating surgeons lack of familiarity with the normal anatomy of the biliary tract field and its many anomalies in both blood vessels and bile channels. Often such an anomalous blood vessel is cut by accident resulting in massive hemorrhage. The surgeon then attempts hurriedly to grasp the bleeding vessel with the artery forceps and in doing so, unknowingly, bites too deep to include the common bile duct also. When such a bleeder is then ligated with either a simple or transfixon ligature the bile duct then is also ligated. Furthermore, when the cystic duct in routine cholecystectomy has been dissected free and upward traction made the common bile duct may be drawn up along with it. If the gall bladder clamp is now placed down too far on the cystic duct it may also include the adjacent common bile duct. When the ligature is then placed proximal to the clamp, the common bile duct may not only be ligated, but when the gall bladder is excised a segment of the common bile duct may also be excised with it.

It is quite generally recognized and in keeping with our experience that in most instances of injury to the common bile duct the surgeon has removed the gall bladder by starting his dissection at the cystic duct and continuing upward to the fundus. Such an approach appears to us as more or less a blind one, where it is not always easy to identify the structures. On the other hand if one starts at the fundus which is in the open and then dissects down to the cystic duct, he can always be sure of his anotomic position. In this approach all the structures are far more easily identified and the chances of injury to the important duct structures are practically eliminated.

When it comes to the surgical treatment of obstructive jaundice, it is fortunate that at no time is the patient such a surgical emergency as to preclude the ordinary and necessary preoperative preparation. In the event of any deficiencies surgery should be deferred until such deficiencies have been corrected. This not only applies to congenital atresias but also in acute cholangeitis associated with a common duct stone. Surgery in the latter should be delayed until the infection has subsided to minimize the risk of the necessary operative procedure. On the other hand, if a malignant neoplasm is suspected or there is known operative trauma to the bile ducts one should proceed as soon as possible with surgical measures.

In general all patients with obstructive jaundice before surgery should be given a high carbohydrate diet as well as a high protein intake. Plasma and blood are very necessary to provide adequate proteins, and if there exists a hypoprothrombinemia Vitamin K is urgently indicated to avoid any danger of hemorrhage. When the jaundiced patient is thus fortified for surgery, regardless of the operating procedure necessary to correct the conditions, one may anticipate a successful outcome.

Much has been written about the proper pre- and post-operative care of the jaundiced patient, but little or nothing is said about the operative care. The period of time that transpires from the moment the patient leaves his room until he returns is probably the most significant. This period may well be designated as the "operative period." Before actually going to surgery, the patient should first, be properly sedated and second, provided with a Levine tube for Wangensteen gastric suction and deflation. In surgery there should be available (1) a well trained anesthetist, (2) fluids, plasma and blood ready for immediate administration by the intravenous route and (3) a competent and experienced surgeon with trained assistants to do the

surgery. With a set-up of this kind, the surgeon can do for his patient what the patient is rightfully entitled to.

Congenital obstruction or atresia of the extrahepatic bile ducts presents one of the more difficult surgical problems in the newborn. In most instances in our experience, there is only a small percentage of infants who have a type of atresia amenable to surgery. Most of them have only a fibrous cord representing the obliterated duct or it is entirely absent. If there should be just a narrow stricture, this might be resected followed by an end to end anastromesis. Occasionally, when the gall bladder contains bile, one might assume that a communication exists with the cystic and hepatic ducts. This then will lend itself to a cholecysto duodenostomy that will function successfully and permanently.

The problem of a common duct stone is usually not too difficult of solution. Most of the stones can be removed from the common duct through an anterior incision. Stones impacted in the ampulla of Vater may easily be removed transduodenally, and those in the intrapancreatic portions of the common duct may readily be approached by mobilizing the duodenum anteriorly and medically which then brings this portion of the duct into view.

In the event of a carcinoma of the common duct or head of the pancreas a far more major problem is encountered. If such a lesion occurs in the common hepatic duct little can be accomplished because of the rather rapid and early spread of the tumor into the liver. Should the carcinoma be in the common bile duct, resections with an end to end anastomosis may be possible. However in our experience these lesions are already too far advanced at the time of surgery that many if not all are inoperable lesions. In the event of a carcinoma of the head of the pancreas one might attempt to do a pancreatico-duodenectomy. This however is a most formidable and difficult surgical procedure and of very great risk even in the hands of the most expert surgeon. We feel for the average surgeon however, a cholecystoduodenostomy is the operation of choice and if the lesion is far advanced there is no other alternative anyway.

The problem of greatest concern consists of that group of common duct strictures resulting from operative trauma. If the injury to the common duct is recognized at the time of surgery, and the surgeon is competent, immediate repair is the procedure of choice, consisting of an end to end anastomosis over a T-tube. If the injury is not recognized at the time of surgery, the patient will appear jaundiced the following day, becoming more and more intense during the ensuing week. Plans to re-operate should be made at once. The immediate repair lends itself to the best results, and the longer one waits the more difficult is the repair and the more likelihood of failure. In the event of failure of an end to end anastomosis or where the injury has resulted in actual loss of a duct segment, there are other methods of repair such as a choledocho-duodenostomy, choledocho-jejunostomy by the Roux-Y technique, or the substitution of a vitallium or rubber tube for a segment of the common bile duct. Furthermore, in the event of a well-formed biliary fistulous tract through which all the bile has drained for some weeks or preferably months, such a tract may be dissected free in its distal portions and then be implanted into the lumen of the duodenum to restore the flow of bile into the intestinal tract.

It has been the problem of leading surgeons everywhere to create a technique of common bile duct repair or reconstruction that would always terminate successfully. Since there are a variety of common bile duct injuries—no one method is applicable to them all. The variety of injuries has demanded a variety of reconstructive methods. We have attempted to call attention to only a few of the various methods of repair. It must be borne in mind that all or any reconstruction procedures may end in failure making re-operation again necessary.

The jaundiced patient in the immediate post-operative period requires close watching as to his respirations, pulse, post-operative bleeding, blood pressure, and fluid and electrolyte balance. Early ambulation is very necessary, Wangensteen suction for 48 hours or longer is very important. While Vitamin K is ordinarily not indicated in post-operative patients, we feel that it has a definite and important place in the post-operative jaundiced patient where the maintenance of a normal or nearly normal prothrombin level is most essential in guarding against post-operative hemorrhage.

Summary: The surgical aspect of jaundice has been discussed from the standpoint of:

1.—Etiology, whether congenital, acquired (traumatic) neoplastic or extrinsic.
2.—Factors that will tend to reduce the incidence of common bile duct strictures resulting from operative trauma.
3.—Methods of approach to the treatment of the various causes of obstructive jaundice.
4.—Emphasizing not only the pre- and postoperative care but more particularly the operative care.

Local Treatment of Infantile Eczema in Infants and Children

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Treatment of infantile eczema or eczema in the young child has been a major source of disappointment to physicians who are asked to direct therapy in these patients. The direct attack in attempting to find the offending allergens and remove them is too seldom met with success. Hill[1] has stated that skilled local treatment often does more good than an immunologic approach, and there is a need for more attention by allergists to local treatment.

In the Scandinavian countries where atopic dermatitis constitutes the most common and important skin affection in infancy and childhood and where the lengthy cold season ill favors the course of this disease, the development of a maximally effective therapy has been necessary. Here it has been found that careful intelligent local treatment and simple dietary restrictions have been rewarded by the greatest success in the management of this trying and rebellious dermatosis. Each child is later subjected to immunologic studies including cutaneous testing for both inhalents and foods and leucocytic indices[2,3] for the most commonly consumed foods.

In the writings that have appeared in regard to the local therapy of "eczema" in the child or infant, the standard dermatologic preparations have been described in number and in detail but there is found a paucity of description which deals specifically with the methods of use or details of simple routines which are of paramount importance in the success of local management of the eczematous skin. It is for this reason that we describe herewith the routine which has enjoyed fairly uniform success in this clinic when used in the hospital treatment of the child with atopic dermatitis.

The physicians of the northern mid-western states are asked to treat many children with this stubborn type of eczema, and a routine which regularly produces good results may be welcome.

In evaluating the effects of therapy in the hospital one must remember the beneficial effect of the hospitalization per se. Osborne and Walder[4] have stated that they found 50 per cent of children with eczema in a group of twenty who were free of involvement in 4 to 8 weeks of hospital care without specifically directed treatment. The effects of hospitalization have also been pointed out by Hellerstrom.[5]

LOCAL THERAPY

The local routine used in this hospital is simply as follows: (1) wet dressings, (2) restraints, (3) lannalan preparations, and (4) tars following lannalan only when needed for particularly lichenified areas.

Wet dressings.—The vast majority of atopic infants and children admitted for eczema present extensive excoriated, weeping, and crusting surfaces and often show secondary infection and impetiginization. These areas tolerate and respond best to continuous wet dressings and bandaging. A 1:30 dilution of aluminum subacetate is used.

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Soft wet cotton cloth, not gauze, is placed over the acute areas and bandaged in place. Since the dressings are kept continuously wet, some precautions are required to prevent the child from becoming cold. Three or four times a day during the feeding periods the skin is exposed to the air but during these periods the infant is held and prevented from scratching by an attendant or nurse. The older children are strictly cautioned against disturbing the skin while the bandages are off.

Restraints.—The multilating scratching, rubbing, and clawing these children resort to reflects the severe intensity of the itching. The prevention of this self-inflicted trauma is one of the most essential elements of treatment.

Of the numerous methods of restraining used the one we employ simply involves placing thin cardboard and linen cuffs outside the wet dressing over the elbows and the knees thus limiting the extent of motion of the limbs and restricting the areas available to the child for scratching. From the bottom of the cuffs, near the wrists and ankles, gauze bands are fastened and secured to the sidebars of the crib when the infant is lying alone.

The infants are restrained until all acute phases are passed and no desire is shown by the patient to injure the skin further. The complete restraining methods used in infants are not practicable or desirable in the older child. In the older group of children the wet dressings are applied in the same manner and bandaged, which somewhat decreases the trauma by the inevitable scratching. The dressings and bandages should be particularly restrictive at night with the use of stiff cardboard or thin wooden splints over the elbows and knees to minimize the range of mo tion and thus offer greater protection for the areas of usual maximum involvement, i.e. the face and the flexural surfaces.

Lannalan. (A crude shale oil)—The most efficient single agent that dermatologists have found in Sweden for the local treatment of atopic dermatitis of infants and children is lannalan in various preparations. Lannalan is a thick dark fluid produced in the fractionation of the products from the oilstone of southern Sweden as first developed near the village of Lanna.[6] This substance was first produced to find a preparation similar to ichthyol, but was, when finally made and studied, found to have more of the physical as well as the therapeutic characteristics of the Russian made nafthalan. The raw heavy oil from which lannalan is derived contains approximately the same amount of sulfur as does ichthyol. This heavy oil is heated for a certain period of time at 200°C with 10 per cent potassium soap to manufacture the lannalan. There has been no evidence found of carcinogenic effects from lannalan. The American counterpart of lannalan may well be the Colorado shale oils currently being investigated for their therapeutic effectiveness in the Department of Dermatology, Cincinnati General Hospital.[7]

Lannalan may be easily prepared in lotion, ointment, or paste forms. This medication is particularly useful by virtue of its employment in the fairly acute phases without dangers of irritation, folliculitis, or toxicity. The preparation used in the childrens department has the following composition:

	Gm. or C.C.
Lannalan	5.00
Zinc Oxide	25.00
Boric Acid Ointment 10%	60.00
Liquid petrolatum	10.00

This preparation is used after the infection has subsided and acute phase has responded to the wet dressings. The bandages are used as above described.

Tars.—In some of the children, particularly those beyond infancy, high temperature tars are used in the treatment of the thickened and lichenified areas. These tars are incorporated in ointments and pastes not exceeding a 2 per cent concentration. Occasionally liquid tars, such as Coal Tar Solution or Liquor Carbonis Detergens in concentrated form are painted on resistant plaques.

SECONDARY INFECTION

Atopic dermatitis in infants and children is very often secondarily infected. In one group of 63 cases we studied, 31 showed some signs of infection or impetiginization. In the instances where a pyoderma was extensive or the child had fever we have used intramuscular penicillin with effectiveness. But as a rule the infection is very superficial and responds best to one of the topical antibacterial ointments. Rivanol (2, ethoxy-6, 9—diamino-acridinium hydrochloride)[8] is used here but other preparations such as sterosan (dichloroxyquinaldine),[9] vioform (iodocchlorhydroxy quinoline), neomycin, or bacitracin can be

used as effectively.

Sulfonamide, penicillin, or furacin ointments are to be avoided because of their relatively high sensitizing potential. The sensitizing index for terramycin, aureomycin, polymyxin, and streptomycin ointments is not at present established so we have avoided their use in the infant and child.

DIET

If a history can be elicited from the parents of particular foods thought to produce exacerbations, these are investigated by using the leucopenic index, intra-and epidermal testing, and the actual trial of the food.

On the basis of anamnestic information, results of the intra- and epidermal tests, leucocytic index, and finally, exposition trials, we are finally able in some measure to evaluate the allergic state of the child.

We have recently employed various unsaturated fatty acids in the dietary regimes as first suggested by the work of Hansen[10] and by the studies of Grupper[11]. Results of these observations are not completed but none of the children of the group included in this paper have received unsaturated fatty acids.

SUMMARY

Atopic dermatitis in infants and children is an extremely common cutaneous disease in Sweden.

The routine treatment of infantile eczema is described with special mention of lannalan (a shale oil) as an effective topical agent.

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Use and Abuse of Ophthalmic Anesthetic Ointments

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Despite the number of articles which have appeared in recent years in the eye journals pointing out their interference with healing—the use of anesthetic eye ointments continues unabated. The practice is by no means confined to men outside the field of ophthalmology. It is my purpose to emphasize the uselessness and harm that is caused by an anesthetic drop or ointment administered by the patient.

Recently, a survey was made of a prescription shop and the following ophthalmic ointments containing anesthetics were obtained—1. Butyn and metaphen, 2. holocaine and metaphen, 3. pontocaine, 4. nupercaine, 5. atropine, butyn and metaphen, 6. metycaine ointment. No doubt, there are others and recently I received literature regarding bacitracin with phenacaine ointment.

Experimentally there has been no conflict among investigators. All recent articles have stressed that the use of topical anesthetics delays the healing processes of the cornea. Gundersen and Liebman demonstrated this on guinea pigs' eyes. Bellows in 1946 found that practically all common antiseptics used in the eye delayed healing. Berens, De Gara and Loutfallah showed

that the ointment bases alone prevented as rapid healing of corneal wounds as when no ointment was used. Most recently Marr, Wood and Storch in a study on small epithelial defects of rats' corneas concluded that both butyn and pontocaine as well as a variety of antiseptics including bacitracin delayed healing or completely stopped it.

The experimental study is definite and conclusive. Yet the use of these agents continues to flourish. When we stop to think that in some of the combinations we add three ingredients to interfere with rapid healing, namely; the anesthetic, an antiseptic and an ointment base, we may very well wonder that nature is so generous.

Among the common conditions for which these ointments are used are corneal abrasions, chemical burns, ultra violet light burns, corneal ulcers, foreign bodies and conjunctivitis. The result in almost all cases is a vicious cycle in which the medication relieves the pain, the anesthetic effect being over and the healing delayed, there is more pain hence more ointment is used.

A recent patient was seen who had a corneal abrasion and had been using the medication every 15 minutes night and day for 36 hours! Two case histories will illustrate the point.

B.S. age 40 scratched right cornea with a branch while gardening. An eye physician prescribed an ointment containing butyn and metaphen to be used "when it pains you." After 48 hours of increasing misery the abrasion was larger than at the onset according to the physician who first treated him. The patient was then put to bed, both eyes bandaged shut for 48 hours and codein given by mouth for pain. At the end of this time there was no evidence of the abrasion and the eye was white and comfortable.

G.T. age 52 got some lime into his left eye while plastering. He was hospitalized and given penicillin intramuscularly. In addition, pontocaine ointment was used PRN for pain. The patient was seen in consultation after a week of treatment, at which time he still complained of terrific pain. The cornea stained over its entire extent, and there was a purulent discharge. Despite the discharge, treatment was instituted of bandaging both eyes for 48 hours with no eye medication. Within 12 hours he no longer required any narcotics and, complete epithelization was seen after the 48 hour period.

In no other specialty are anesthetic ointments used to the extent that they are in treatment of the eyes. One would not treat a fresh laceration of the skin with a surface anesthetic ointment. Yet an abrasion of the cornea is so treated. A foreign body embedded in an ulcerated area of skin would not be treated with an anesthetic ointment until its removal the next day. Yet such is frequently the treatment of foreign bodies of the cornea. The reason for the disfavor of skin ointments containing anesthetics is the frequent allergic reactions. The eye ointments are not exempt and when a medication contains both an antiseptic and anesthetic the difficulty of determining which is responsible is self evident. When one considers the fact that the ointments are only a "fool's paradise" to the patient, and a short one at that, their use is questionable. If the dictum of "primum non nocere" is to be followed the anesthetic ointments should be delegated to the trash can.

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CASE RECORDS OF THE COOK COUNTY HOSPITAL

KARL MEYER, LEO M. ZIMMERMAN, DEPT. EDITORS

Infectious Mononucleosis and the Guillain Barre Syndrome

A Review of the Literature and the Report of Two Cases

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The association of infectious mononucleosis with the Guillain Barre syndrome was first reported by Hiller and Fox in 1943.[1] Since then this relationship has been cited in four additional cases,[2, 3, 4] two of which were fatal.[2] In the past year we have observed two cases of infectious mononucleosis presenting themselves with a neurologic disease of the Guillain Barre type.

Case 1. A 41 year old negro female entered the Cook County Hospital on May 9, 1951. She had been well until one week prior to admission to the hospital when she noted a tender swelling at the angle of her right jaw which disappeared in one day and was followed by arthralgias of the shoulders, elbows, and knees. Numbness of the legs then began, progressing to weakness and paralysis of both lower extremities. At the time of entering the hospital she complained of stiffness of the neck, paresthesias and weakness of both arms which had been present for the preceding two days. System inventory revealed a history of menorrhagia.

Physical examination revealed a well developed, well nourished, woman who appeared subacutely ill. Temperature 100° R.; pulse rate 96; blood pressure 130 diastolic 70 systolic. There was a large papillary naevus over the left eye. The heart was not enlarged but a grade II systolic murmur was heard at the apex. The lungs were normal to auscultation and percussion. Examination of the abdomen revealed some tenderness in the left upper quadrant and spleen edge was felt two to three centimeters below the costal margin. Neurological examination revealed weakness in both lower extremities; deep reflexes were present with an increased

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right knee jerk; and an increased left biceps reflex. Positive Babinski and Hoffman reflexes were noted bilaterally. Abdominal reflexes were absent. Pain sensation to T 3 was diminished. The erythrocyte count was 3.57 million, hemoglobin 49 per cent (7.6 Gm.) leukocytes 6,800 with 52 per cent polys, 3 per cent bands, 33 per cent lymphocytes, 10 per cent monocytes, 2 per cent eosinophils. Atypical lymphocytes were present. A spinal fluid examination revealed a moderate increase in pressure with free flow of fluid, negative Quickenstedt, occasional red blood cells, protein of 82 mg., and glucose of 60 mg.

Course: She developed retention of urine requiring constant catheterization. Paresthesias of both arms were constant and there was a gradual progression of paralysis to complete quadriplegia. Complete loss of pain and temperature sensation with impaired loss of touch sensation to T3 developed. A patchy disturbance of pain and touch appreciation was noted over the upper extremities. Because of increasing dyspnea, she was placed in a respirator intermittently throughout the remainder of her hospital stay. A folliculitis over the posterior cervical region, which was first noted on May 22, along with a large sacral decubitus and smaller decubiti on the heels appeared. In spite of penicillin and streptomycin therapy she had daily fever, averaging a maximum of 101° F. Repeated spinal fluid examinations revealed intermittent protein elevations accompanied in only one instance by an increase in cells. This occurred on May 15 when a protein of 180 mg. was present with a cell count of 65 lymphocytes, 8 polys, 5 RBC. Three days later a protein of 56 mg. with no cells was recorded. Cultures for acid fast and other organisms as well as abnormal serologic changes were consistently negative. On September 14 the patient became psychotic, expressing delusional ideas of a paranoid depressive nature and four days later she had a epileptiform seizure. Examination at this time revealed right supranuclear facial paresis, analgesia to the upper thoracic level, weak movements manifested in the upper extremities and marked atrophy of the forearm muscles. A feeble biceps jerk was the only reflex elicitable.

She became progressively worse, with increasing dyspnea characterized by the use of accessory neck muscles with minimal function of the diaphragm and intercostal muscles. She expired on September 26, 1951. No autopsy was obtained.

Case 2. A 27 year old negro female entered the Cook County Hospital on November 27, 1951 with a history of gradual onset of arthralgias affecting the interphalangeal joints and knees three weeks before admission. This was followed by weakness of the legs progressing to inability to walk, following which weakness of the hands developed. The patient was a housewife, had four pregnancies with one stillbirth, and no history of syphilis.

She was well developed and well nourished, and did not appear ill. Temperature was 99° F., pulse rate 72, respirations 18, blood pressure 120 diastolic 70 systolic. A few small pea-sized nodes were palpable in the submandibular and supraclavicular regions. The lungs were clear, the heart was of normal size, and a grade II systolic murmur was present at the base. The liver was palpable three centimeters below the right costal margin. The spleen was felt two centimeters below the left costal margin. The bladder was distended to the umbilicus. Neurological examination revealed a quadriparesis, most marked on the right. There were bilateral ankle clonus and Babinski reflexes. The triceps, radial and ulnar reflexes were absent on the right and a positive Hoffmann sign was present on the left. Vibration sensation was decreased over the left leg, absent over the anterior superior iliac spine, and bilaterally decreased over the lower ribs to T_4. A sensory level was noted at T_8 with a decreased response to pin prick bilaterally. The cranial nerves were intact.

Laboratory studies revealed an erythrocyte count of 4.63 million, hemoglobin 90 per cent (14.0 Gm.), leukocytes 5,600, with 35 per cent polys, 11 per cent bands, 49 per cent lymphocytes, 5 per cent monocytes. A few atypical lymphocytes were present. The spinal fluid contained 68 mg. protein, with four cells. Three subsequent spinal fluid examinations over the following month revealed proteins of 46, 40, 46. No cells were noted. Serologic studies on the blood and spinal fluid as well as spinal fluid cultures were normal. Repeated heterophile agglutination determinations were obtained. On December 2, 1951 the titer was 1:56; on 12/17/51, 1.112; on 1/7/52, 1:28; on 1/14/52, 1:112; and on 2/4/52, 1:56. A typical lymphocytes continued to be found in the blood as late as January 20, 1952. The "liver profile" was

normal. A 24 hour urine specimen contained 54 mg. of lead (within normal limits).

Course: On December 5, 1951 the patient was noted to have dyspnea; respiration was mediated by diaphragmatic and upper intercostal action. She continued to manifest a sensory level to T_8 with absence of light touch and decrease in pain on the right to this level. Hyperesthesia was present at T_8 and in both arms. Treatment consisted of Terramycin 250 mg. every four hours from December 7 to December 26, and Pyromen minims V b.i.d. from January 24 to February 22, 1952. The patient showed very minimal improvement and at the time of writing continues to have a flaccid paraplegia of the lower extremities with paresis of extensor muscles of forearms. A repeat differential on March 14, 1952 revealed a leukocyte count of 7,750 with 40 per cent polys, 4 per cent eosinophils, 51 per cent lymphocytes, 5 per cent monocytes. Atypical lymphocytes were no longer present.

DISCUSSION

The neurologic manifestations of infectious mononucleosis have received increasing attention since the description by Epstein and Dameshek[5] of an encephalitic involvement accompanying the disease. Cases with meningitis,[6] encephalomyelitis[7] and meningoencephalitis[8] have been reported since then. Its association with the Guillain Barre syndrome has only more recently been emphasized. We concur with the suggestion of Hiller and Fox[1] that a heterophile agglutination test should be obtained in every case of Guillain Barre disease and feel that the blood should be critically studied with this in mind. Additional data in support of this thesis are found in a report by Baker[9] who in reviewing 33 cases of Guillain Barre syndrome found that the heterophile antibodies had an elevated titer in five of six cases tested.

First described by Osler[10] under the title of "acute febrile polyneuritis," the Guillain Barre syndrome has remained a symptom complex with unknown etiology and multiple associations. It is known to follow a variety of infections: upper respiratory, pneumonia, scarlet fever, mumps, measles, varicella, encephalitis, infectious hepatitis, botulism, tuberculosis, and syphilis. Whether the syndrome has a specific etiology, possibly viral, or is in the nature of a toxic response to other infections and intoxications has been a matter of conjecture. In Ricker's[3] autopsied cases several peripheral nerves were noted to be infiltrated by lymphocytes and mononuclear cells but specific infiltrations of atypical lymphocytes in any of the nervous tissues was not described.

The essential features of the Guillain Barre syndrome, consisting of early subjective sensory phenomena followed by bilateral symmetrical weakness and paralysis and the preponderance of motor over sensory involvement, would seem to be fulfilled in our cases. The frequency of cranial nerve involvement, especially the facial, the loss of reflexes, and the occurrence of a high incidence of respiratory paresis were also borne out in the cases presented.

The necessity of an albumino-cytologic dissociation as a requirement in the Guillain Barre syndrome has been questioned. It is thought by many authors that an elevated spinal fluid protein will be found if searched for persistently throughout the course of the disease but its presence is not essential to the diagnosis. Our cases presented only moderate elevations of spinal fluid protein.

Although no heterophile agglutination study was done in Klovstad's Case I and in our Case I, the characteristic blood findings, adenopathy, and in our case splenomegaly, are sufficient to sustain the diagnosis of infectious mononucleosis. Case 2 of Ricker et al,[2] likewise lacked a heterophile agglutination test but autopsy revealed the characteristic findings in the lymph nodes, liver and spleen, in addition to the neurological lesions.

Slade's case[11] has been included in the reviewed group since it was clinically compatible and revealed the typical spinal fluid findings of Guillain Barre disease.

The original concept of the benignity of the Guillain Barré syndrome has been modified in view of a 20 to 40 per cent mortality rate. Death occurred in three of the eight cases considered in this review, where it coexisted with infectious mononucleosis, reflecting the ominous prognosis of the condition.

SUMMARY

The reported cases of infectious mononucleosis associated with the Guillain Barré syndrome have been tabulated and two additional cases are presented. It is thought that wider recognition of the association of these entities will reveal a

more frequent occurrence of infectious mononucleosis underlying the Guillain Barré syndrome.

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REVIEW OF CASES

Author	Age	Sex	Blood	Heterophile	Spinal Fluid	Neurologic Signs	Nodes, Spleen	Outcome
Hiller & Fox[1] 1943	17	F		1:256 1:125	Protein 360,435 Cells 2, 9	Difficulty with swallowing and speech. Rt. facial paresis. Absent abdominal and knee reflexes	Spleen: cervical, axillary, inguinal. Spleen palpable.	Complete recovery
Ricker[2] 1949 Case I	22	M	WBC 10,200 82% lymphs, many atypical	1:1792	Protein "increased" *A.* cells 97 (94% lymphs 6% polys) *B.* Protein 81 cells 36 (98% lymphs 2% polys)	Paresthesias hands and feet. Rt. facial paralysis, peripheral type. Difficulty swallowing. Hyperesthesia hands, feet. Flaccid quadriplegia. Absent deep reflexes. Respiratory paralysis. Clonic convulsion.	Cervical, slight	Death
Case II	21	M	WBC 9,900 Lymphs 39%	Not done	Protein 74 mg. cells 8	Paresthesias. Respiratory paresis. Abdominal and deep reflexes absent. Weakness upper extremities. Trunk and lower extremities paralyzed.	Cervical	Death
Graham[3] 1949	18	M	WBC 15,800 77% lymphs, some atypical	1:7156	Protein 112 Cells 7 lymphs 25 RBC Colloidal gold 5553332111	Dysarthria, weakness lateral gaze. Weakness shoulder girdle, both arms. Bilateral wrist drop. Weakness trunk, legs. Reflexes hypoactive. Absent cremastric. Slight sensory loss left face. Tenderness muscles.	Slight cervical axillary inguinal. No spleen.	Walking in six months
Klovstad[4] 1950	6	M	WBC 13,120 8,980 7,960 Atypical lymphs 50% 77%	Not done	Protein increased 1:20, 1:70 Cells 2, 1	Rt. peripheral facial paralysis. Marked symmetrical motor-weakness both extremities. Absent patellar and Achilles reflexes bilaterally.	Cervical, axillary, inguinal. No spleen.	Recovery after persistent motor weakness for "long time."
Slade[11] 1946	31	M	WBC 17,800 76% lymphs	1:896	Protein 91 Cells 4	Dysarthria. Facial paralysis. Absent rt. abdominal and cremastric. Loss pain and temperature over 5th cranial nerves. Generalized weakness.	Cervical, supraclavicular, epitrochlear, popliteal.	Six months. later: loss of taste, numbness and weakness of face.

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HEART DISEASE IN THE ORIENT

Dr. Paul D. White, in his recent message to the New Philippine Heart Association, remarked as follows: "I, myself, recently in Pakistan and in India, found that, contrary to old ideas, rheumatic heart disease, hypertension, and coronary heart disease were common in these countries even though their true prevalence has been somewhat masked by the high incidence in the past of infectious diseases and faulty nutrition." Such revealing impressions were gathered from hospitals, examinations of patients, and conferences with doctors from these two Asian countries during a recent visit paid them by Dr. White. He was informed that rheumatic heart disease is the commonest type of heart disease in said countries. He also found a considerable amount of coronary heart disease and hypertension specially among private patients. In fact, he saw two men in Pakistan who had coronary thrombosis in their thirties, and one young man in India who was recovering from acute coronary thrombosis at the age of 29. In other words, Dr. White emphasizes: "Heart disease, without any doubt, is one of the most serious, perhaps the most threatening malady of our times, not only in the western world but also in the east." *Editorial, Heart Diseases — A Challenge To Philippine Medicine, J. Philippine M.A., June 1952.*

OFFICE MOVIES

Waiting for the doctor may become a real pleasure. Studies are under way at the University of Chicago clinics on the possibility of using movies in clinics and doctors' offices as a medium for health education and entertainment.

According to a report in the July 1952 issue of the Journal of Medical Education, the chief purpose of the study is to determine what types of films prove most acceptable to a general office. Existing film libraries provide a wealth of material ranging from instructive cartoons to films of more formal educational value.

A portable machine, easy to set up, is being used. It has an 11 by 15-inch screen and is about the size of an average suitcase when closed. No operator is required once the machine is put into action. A continuous loop film makes possible repeated showings of 16mm. color or black and white film without rewinding or rethreading. A 300-watt projection lamp makes viewing easy even in a lighted room. *Editorial, Movies For Your Office, N.Y. Med., Aug. 20, 1952.*

CASE REPORTS

The Use of an Anti-Convulsant in Tetanus

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Maywood

A fatal outcome in tetanus has been considered highly probable. The prognosis is doubtful and depends largely upon the time interval between initial symptoms and the occurrence of generalized convulsions. The longer the interval between convulsions, the better is the prognosis. A sound regimen for administration of antitoxin has been formulated[1] but contol of convulsions and muscle spasm still remains a problem. It goes without saying that the best treatment is prevention, such as wide use of tetanus toxoid, but nevertheless sporadic cases occur and probably will continue to so do for some time.

In the past, attempts to control convulsions usually were made by the administration of central depressants, among which may be mentioned gas anesthetics, paraldehyde, intravenous barbiturates in doses just adequate for control, — a procedure frequently unsuccessful. Because of its rapidity of action, discredited chloroform has been used even until some of the other depressants could become effective. In general, all these measures failed more often than not to obtain adequate control and recovery, which latter therefore remained infrequent.

The availability of the highly purified active principle from curare plants such as tubocurarine seems, to the writer at least, to afford a more hopeful prognosis. This is based on the physiological action of tubocurarine in blocking neural transmission to skeletal muscle. The blocking action of tubocurarine on the somatic nerves to skeletal muscle is analogous to that of atropine on the parasympathetic nerves to smooth muscle. Tubocurarine is chiefly an antispasmodic of skeletal muscle, reducing the tone or contractile power by specific peripheral effect. Tubocurarine apparently has some effect also as a depressant to the central nervous system, but such effect has not been studied as thoroughly as the peripheral effects[2].

The use of curare preparations to control convulsions of tetanus has been known for a long time. The earlier trials were made with crude

curare preparations. The availability of a highly purified preparation of tubocurarine, the principal component of chondodendrum tomentosum, through the exploration of Gill quoted by Klein and Gordon[3] reduced greatly the earlier hazards associated with curare in the treatment of neuromuscular disorders.

The first report on the use of curare in human tetanus by Sayres in 1858[4] is interesting in that his patient, a laborer, developed severe tetanus a few days after receiving a wound in the thumb. This is the closest approach of all recorded to the case reported herein, wherein the patient developed the disease from a crushing injury to the left little finger. Wells[5] used crude curare preparations on 3 patients, Vella[6] on 12 soldiers with battle wounds. For the remainder of the century the use of curare in tetanus became common (quoted by McIntyre, reference[1], page 183). These early cases were remarkable in that crude preparations, always fraught with toxic properties, were used.

The more recent evidence is so inconclusive that the prevention of death from tetanus by curare drugs administered in aqueous solutions was not established. This is not due so much to the inability of the drug to control convulsions as it is to side effects which interfere with respiration, such as blocking of the myoneural junction in the respiratory musculature and the airway. Nevertheless, Evans and coworkers[7] report a case of complete recovery from tetanus in a 16 year old boy, in which up to 252 mg. of the alkaloid was administered in aqueous solution in a period of 6 days. These workers took precautions to maintain an adequate airway. The control of convulsions was remarkable. While tubocurarine in aqueous solutions has been used, an additional hazard arises from difficulty in maintaining control of alkaloid levels. This does not permit the patient to obtain the full benefits of the relaxation afforded by tubocurarine.

These shortcomings for aqueous solutions have been recognized for some time, particularly for relaxation in neuromuscular spasm and concomitant pain. Schlesinger[8] attempted to overcome these shortcomings by preparing a suspension of tubocurarine in oil and wax. Such a preparation permitted the administration of a large dose of the alkaloid to obtain the antispasmodic effects for a longer period of time. Despite the circumstance that this preparation had to be handled with caution, Weed and coworkers[9] used a preparation of tubocurarine in oil and wax with a successful outcome on 3 cases of tetanus.

The present report details the clinical history of a successful recovery from tetanus. The use of a repository injection of pure tubocurarine (Tubadil)* for the control of convulsions and muscle spasm permitted us to adequately meet the criteria suggested by Cullen[10] for the successful use of tubocurarine in tetanus. Cullen suggested that curare in aqueous solution be administered by one trained in the use of curare administration and constant nursing supervision during the early stages. The safety of repository tubocurarine permits its ready administration without unusual precautions. With such supervision, Cullen pointed out that curare should be effective in the treatment and possess the advantages of a patient awake, able to move, defecate and respire freely. Of these the last is most important. Repository tubocurarine has been shown to be a safe drug, not only by Fuller[11] but in our own experience in the treatment of muscle spasm for which over 250 injections have been made in the course of a two year period. Indeed, such safety of the drug in our hands prompted us to use it in this case. Thus one may provide the skeletal muscle relaxing effects of tubocurarine while avoiding the earlier shortcomings of aqueous preparations.

Mr. M., age 22, was first seen by me on June 9, 1951 with typical symptoms of tetanus — inability to open mouth, muchal rigidity and general muscular spasticity. The tetanus resulted from a crushing injury to the left little finger on May 31, 1951. He was not given tetanus antitoxin, since he insisted he was sensitive to it and could not tolerate it, but was given tetanus toxoid, and penicillin was administered parenterally at the time and on the following day in ½ million unit doses. He was also given triple sulfa tablets.

The symptoms of tetanus had developed the day before I saw him. The following treatment was immediately instituted:

A. Sodium amytal, 0.25 Gm. (3¾ gr.) was administered intravenously.

*Tubadil, Endo: each cubic centimeter of Tubadil (Endo) represents: d-tubocurarine chloride pentahydrate, 25 mg.; oxycholesterol derivatives, 312 mg.; white wax, 20 mg.; chlorobutanol, anhydrous, 5 mg., and peanut oil, 562 mg. (0.61 cc.).

B. One cc. or 3 mg. of an aqueous preparation of tubocurarine (Intocostrin, Squibb) was administered intravenously; also 1 million units penicillin was given intravenously.

C. The left little finger was amputated under block anesthesia proximal to a necrotic tissue area.

D. One million units penicillin was injected around the base of the little finger and another million in the open end of the stump before final suturing.

E. Just before sending the patient to the hospital, 15 mgm. (0.6 cc.) of a respiratory injection of tubocurarine (Tubadil, Endo) was administered intramuscularly. Three million units penicillin were administered intramuscularly.

Since penicillin is even more effective in destroying the tetanus organism than is antitoxin, it is probable that if penicillin had been injected locally in the region of the injury and just proximal to it as well, when first seen, this condition would not have developed. When the toxin has become attached to nerve tissue, there is nothing which will counteract it effectively. Nevertheless, large doses of tetanus antitoxin should be given to neutralize what free toxin there might be, and what still might be produced from any remaining organisms. The positiveness with which this patient declared he could not tolerate antitoxin produced a complicated problem.

As the case presented itself, there was the problem of not allowing more toxin to be produced, which meant destroying or rendering inactive any remaining organisms. Second, there was the problem of neutralizing any toxin still free, and third, there was the problem of preventing convulsions. To these a fourth might well be added, that of preventing secondary infection. Several years ago a case of tetanus died, apparently more from the development of a pneumonia than from the tetanus alone.

Treatment in this case then required (a) early administration of large doses of tetanus antitoxin, to which the patient had some sensitivity; (b) counteracting the sensitivity; (c) destroying any remaining organisms and preventing secondary infection; (d) treatment of the tetanic state.

Attempt was made to desensitize the patient to antitoxin by frequent, repeated small injections first intradermally, then subcutaneously, then intramuscularly, and increasing the size of the doses. At the same time, antihistaminics were administered. Since local reaction with this method was not too severe, large doses of antitoxin were administered. The hospital had on hand 12,000 units of bovine antitoxin, but no more could be obtained. 3,000 units of this were given intramuscularly and 9,000 units were given in 500 cc. of 5% glucose with 20 mgms. benadryl intravenously. Pyribenzamine was administered orally in 100 mgm. doses every 4 hours. Penicillin was given immediately on entering the hospital — intramuscularly twice in the first 24 hours in 4 million unit doses each time. Shortly after giving the bovine antitoxin, equine antitoxin (Squibb) was given — 3,500 units in 1000 cc. 10% glucose with 1 million units penicillin, plus 20 mgms. benadryl, plus 50 mgms. histadyl. This was followed in a few hours with 50,000 units tetanus antitoxin with 50 mgms. histadyl intravenously, which was again repeated in 4 hours. All told, he was given 155,000 units equine tetanus antitoxin (Squibb) all except 2,350 units intravenously.

Antihistaminics were given as follows: 100 mgms. pyribenzamine every 4 hours; benadryl and histadyl were given intravenously as before mentioned, but benadryl was given daily from June 13 to June 18, totalling 340 mgms., always intravenously with parenteral fluids. On June 26 the pyribenzamine was reduced to 50 mgms. every 4 hours. At no time did any evidence of an antitoxin sensitivity develop.

Penicillin was given with parenteral fluids in million unit doses daily until June 19, when parenteral fluids were discontinued When penicillin was discontinued terramycin was substituted in 500 mgm. doses every 6 hours. No evidence of any secondary infection ever became manifest.

An adequate urinary output was maintained by constant intravenous fluids, using glucose and protein hydrolysate. As soon as the patient could take sufficient fluids by mouth, parenteral administration was discontinued, but this did not occur till June 19.

The major problem in the treatment of this case was control of muscle spasm and rigidity. For this he was given 0.25 grams (3¾ grains) sodium amytal every 6 hours intravenously. Mephenesin tablets (Tolserol, Squibb) were given in gram doses orally every 4 hours. By crushing them and taking sips of water, the patient

was usually able to take them. In addition, he was given 25 mgms. repository tubocurarine (Tubadil, Endo, 1 cc.) intramuscularly every 24 hours. For pain, demerol in 50 mgms. doses was administered as required. Constant nursing attendance to guard against unnecessary stimuli and to exercise unabated vigilance was considered as always to be a prime requisite.

The patient became steadily worse for the first 72 hours. He had many spasmodic, general muscular contractions and was practically unable to swallow. Fluids were administered by venoclysis constantly, as before mentioned. He was very apprehensive. On the third day he was placed in an oxygen tent, as breathing was somewhat difficult. He could open his mouth sufficiently to take some nourishment, but would choke frequently on swallowing. On the 6th day, improvement seemed to be rather marked—noted by nearly complete relaxation when asleep, and reduction of trismus and convulsive movements when awake. He then became considerably worse — temperature reaching 103 on the 10th day, after which there was steady improvement.

Since relaxation was always more marked for 12 to 18 hours after receiving repository tubocurarine, on the 6th day it was administered every 18 hours. The patient actually looked forward to these injections because of the relief he experienced as a result. On the 9th day, intravenous barbiturate was discontinued and the intramuscular route substituted, using 2½ grains pentobarbital sodium every 6 hours instead. After the 10th day, barbiturates were given only as needed. By the 12th day, he required only 5 to 6 grains daily, and by the 18th, they were entirely discontinued. On the 17th hospital day, repository tubocurarine was reduced to 18 mgms. (¾ cc.) daily, but mephenesin was continued, 1 gram every 4 hours. On the 13th day, he was able to sit up and eat unassisted; nuchal rigidity was practically gone. He became ambulatory on the 16th day, and continued to gain in strength and spirits from then on. He was discharged on the 23rd hospital day with only a complaint of stiffness and soreness between the shoulders.

After discharge, he remained somewhat weak with a relatively rapid pulse, and did not return to work until about September 3, 1951.

In reviewing this case, it is our impression that in addition to the usual central nervous system depressants, repository tubocurarine was a valuable adjunct. Recovery was dependent upon many factors in this alleged case of sensitivity to antitoxin.

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COUNCIL MEETING MINUTES

The August meeting of the Council was held at the Hotel Sherman, Chicago, on Sunday, August 24, with the following present: Stone, Sweeney, Lewis, Kirby, Camp, Lundholm, O'Neill, Oldfield, Vaughn, Reichert, Hesseltine, Reisch, Blair, Newcomb, Goodyear, English, Fullerton, Montgomery, Hamilton, Hopkins, White, Cross, Hellmuth, Limarzi, Van Dellen, John W. Neal, James C. Leary, Hirsch, Steinhoff, Lois Steinhoff, Bornemeier and Frances C. Zimmer. Minutes of last meeting were approved. Secretary read the financial report, and commented on regular report mailed to members before the meeting. Report was received and placed on file, by proper action.

Sweeney reported as President, telling of his official activities since the last meeting. Physician-Delegates to both National Conventions were honored at dinners arranged for them, both of which Sweeney attended. He attended a number of affairs by special invitation, and had received invitations to a number of other meetings, dinners, and conferences which would be held in the early fall.

The President-Elect, Lewis, had no report, other than telling of some meetings recently attended.

Hopkins reported on activities of Committee on Medical Service and Public Relations; Neal talked about coming legislative session and some matters to be considered in which the Society is interested. Made some predictions as to some matters which he believes will be brought up early in the session. Leary told of his assisting in the arrangements for the meeting at Mt. Carroll honoring three physicians in the one small town who had given a total of 167 years of service. Also his assisting Peoria Medical Society in arranging their exhibit at the Peoria Fair.

Blair reported as Chairman of the Educational Committee. Stated that TV Health shows were scheduled to be resumed in October. Dr. Bauer of the A.M.A. had asked the Society to co-sponsor in kinoscoping a TV show. Mentioned costs, which the A.M.A. is willing to assume jointly with the State Society. Discussed continued popularity of the release "Health Talk." Told of the need for another clerical assistant in the office, as only Miss Fox and Mrs. Simmons were currently in the office. By proper action, the kinoscoping of a TV-show was approved, as suggested by Dr. Bauer.

Dr. Limarzi stated that Coye C. Mason would take the chairmanship on the Committee on Blood Banks. It was believed advisable to have hospitals and laboratories licensed, to permit blood typing for transfusions. Reference made to some errors which have caused much trouble. Cross thought this could be done by the State Health Department; would investigate and report to the Council at a later meeting.

Limarzi referred to a meeting of his Scientific Service Committee to be held during September, when they would discuss their functions, and evaluation given to questionnaires recently received from county medical societies. Programs for several societies have been set up months in advance. A Centennial meeting has been arranged for Knox County, to be held November 19. Believes it advisable to revise the speakers list the current one having been released in 1947. Report received, and recommendations approved. Hamilton reports as Chairman of Finance Committee, discussing receipts and expenditures, and some unusual expenses which may be incurred in the future. Stated that the Society is not now operating "in the red." Referred to P. G. Program as proposed by Committee Chairman, George Hellmuth, and have his recommendation as to the financial assistance which should be approved. Hellmuth then gave his suggested P.G. program, tentatively planning 5 major conferences, using for each

teaching personnel of one of the five medical schools. Ten in larger cities with perhaps 8 speakers to be procured from larger hospitals, and about 20 in smaller, and several "out of the way" places where similar services had not previously been given by the committee, probably evening meetings with about three speakers. He also suggested that a careful and thorough survey of the needs of various parts of the state be made, as to conferences, and to get their respective recommendations. The report was approved and financial assistance promised to carry out the program, as tentatively described.

Hirsch, as Chairman of a committee to investigate the coroner's office gave a progress report. Conditions in Illinois in connection with the work of coroner, was contrasted with their functions in other states. In Illinois the coroner's office operates under a very old law, which surely needs revision. The Chicago Institute of Medicine, and the Bar Association are all interested in seeing the law revised. More information and suggestions will be reported at a later meeting of the Council.

Newcomb as Chairman of the Committee on Cardiovascular Diseases, gave a progress report. The purpose of the committee to act as a liaison between the Heart Associations, and the Illinois State Medical Society. He gave the several recommendations of his committee, such as collection of data concerning the appropriations now available for cardiovascular control, and how the money is being used; cooperation with programs for rehabilitation of cardiovascular patients; recommends that the Illinois and the Chicago Heart Associations assist in formulating of a program for the groups, to be held prior to the next annual meeting of the Society; encourage the appointment of committees in component societies to function for lay and professional education, and for hospital staff meetings. Believes the Heart Bulletin should be properly financed and sent to all physicians in the state; frequent articles in the Illinois Medical Journal on cardiovascular diseases, and increase the number of speakers willing to go before professional and lay groups in the proposed educational program.

The report was accepted and placed on file. Steinhoff gave an interesting report on the present activities relative to procuring physicians for the Armed Forces, which was to be attached to the minutes, and puplished in the Illinois Medical Journal. It was actually published as the leading article in the September issue of the Illinois Medical Journal. Dr. Cross gave an interesting report of the functions and activities of the State Department of Public Health, and especially to in much detail the present situation in regard to poliomyelitis in the state. He submitted an elaborate report which was sent to all members with the minutes of this Council meeting, and will appear in the Journal. Dr. Cross told of the lack of personnel in his Department, and solicited suggestions as to how they might receive assistance from practicing physicians, especially in occasionally, on call, making local investigations. Oldfield discussed the Tb survey in Oak Park, somewhat similar to the one of a year ago. Local Woman's Auxiliary Branch rendered valuable service in the survey.

Reisch told of the Society exhibit at the Illinois State Fair, giving information as to the interest displayed by the many thousands of people who visited the exhibit. Some 60,000 pieces of literature were distributed by the Woman's Auxiliary members on hand throughout the entire period. Believes that next year, a larger booth should be procured, the cost to be very low. Several local problems were presented by individual councilors each of which were given proper consideration. The Council had been requested to approve USPHS personnel coming into the state to teach the correct procedure to determine prothrombin time to technicians. Dr. Limarzi discussed the proposal, and it was suggested that he consult with the Illinois Society of Pathologists and get their reactions to the proposal, he to report at the next meeting of the Council.

There was considerable discussion on several matters pertaining to the Illinois Medical Journal. The Editorial Board and Journal Committee recently recommended that in future years, the transactions of the House of Delegates be published annually in supplementary form to be sent to members with their Journal, or in abstract, in perhaps three issues as is done with the minutes of the A.M.A. House of Delegates meetings. After much discussion, by proper motion it was voted to recommend abstracting of the transactions so that nothing of importance would be eliminated, and these be published in two or three consecutive issues of the Journal each year. The publication of the Journal is a function of the Council, and this action can be reported to the House at the next session.

Secretary reported that letters had been sent to all component and branch societies urging that they submit name and data concerning their candidates for the outstanding physician of the year. The deadline first given as October 1, had been extended to the 15th, which was the latest the material could be submitted.

A list of Emeritus Past Service and Retired Member candidates was submitted, as sent in by their respective societies. All were properly elected, as reported.

Chairman Stone stated that the remaining meetings of the Council for 1952, would be on October 19, and December 14. Meetings in 1953 until the annual meeting to be stated at the October meeting. Bills as audited by finance committee were approved. Adjournment at 3:15 P.M.

Harold M. Camp, M.D.
Secretary

PATHOLOGY CONFERENCES

EDWIN F. HIRSCH, DEPARTMENT EDITOR

Variations in the Structure of Lymphosarcoma Tissues

Edwin F. Hirsch, M.D.
Chicago

Lymphosarcomas of lymph nodes and other viscera present problems in tissue diagnosis because these tumors have a wide range of cellular structure. The initial phase of some forms of lymphosarcoma is a hyperplasia of the follicles and lymphocytes throughout the node. Other sarcomas have variable amounts of hyaline stroma in scars, or fibrils and cells which resemble reticulo-endothelium. Authors seeking to clarify the forms of sarcoma that may arise in lymph nodes have suggested a grouping on the basis of derivation from the various mesenchymal tissues contained in lymph nodes. These, according to texts of histology are 1) the connective tissue stroma cells (fibroblasts), 2) the reticular fibers (or cells), 3) the endothelial cells (macrophages) and 4) the lymphocytes and lymphoblasts. Variations in structure among the lymphocytic and lymphoblastic forms of lymphosarcoma, including the follicular (malignant) lymphoma are small, but the structural range of the reticulum or reticuloendothelial cell sarcomas, many of them not pure types, can be marked and confusing. Roulet[1,2] stated that immature, mature and combination forms of the reticulum cell lymphosarcomas occur. The immature variety has reticulum cells, 15 to 20μ in size, in syncytial masses; the mature form has a definite content of reticulum fibers and cells which range in size even to giant forms, the Sternberg cells. Combinations of these cellular and stroma elements are designated as Hodgkin's Disease. Conceivably a fibrosarcoma may arise from the connective tissue stroma of a lymph node.

Callender[3] traced to the reticulocyte, the reticulum cell sarcoma and the so-called sarcoma form of Hodgkin's Disease. The Hodgkin's sarcomas with their large content of reticulum, he stated, cannot be separated from reticulum cell sarcomas. Gall and Mallory[4] arranged the lymphosarcomas into seven groups. The first of these, the stem cell lymphoma and the second, the clasmatocytic lymphoma, are the forms designated commonly as the reticulum cell

From the Henry Baird Favill Laboratory of St. Luke's Hospital.

sarcoma. The others are the lymphoblastic lymphoma (large lymphocyte), the lymphocytic lymphoma (small lymphocyte), the Hodgkin's lymphoma, the Hodgkin's sarcoma, and the follicular lymphoma. The stem cell lymphosarcomas include reticulum and intermediary forms, the first composed of syncytial masses of cells, the second of discrete cells. The clasmatocytic lymphoma contains cells smaller than the stem cells, but larger than lymphocytes, and having an abundant acidophilic cytoplasm and distinct borders. Warren and Piceria[5] stated that the reticulum cell sarcomas of lymph nodes must be differentiated from other mesenchymal and lymphoid tissue tumors. The reticulum cell sarcomas according to their report are of undifferentiated syncytial and reticulum cells. There are also mixed forms of reticulum and lymphoid cell sarcomas.

Diagnostic problems generally are less frequent with the small and large lymphocytic forms of lymphosarcoma. Tumors of reticuloendothelial cells, however, including the so-called Hodgkin's sarcoma have a much greater range in structure and present problems in diagnosis.

Herbut, Miller and Lowell[6] discussed the relation of Hodgkin's disease, lymphosarcoma and reticulum cell sarcoma. They stated that Gibbons[7] was among the first to consider Hodgkin's disease a variant of lymphosarcoma. Since then, according to their review, many others have expressed a similar opinion. They reported on six patients that at one time were diagnosed as Hodgkin's disease, at another time as lymphosarcoma, and later the tumor tissues obtained by necropsy were found to have various combinations of Hodgkin's disease, lymphosarcoma and reticulum cell sarcoma. The authors concluded that the three diseases arise from the reticulum cell which may differentiate into the histologic forms mentioned.

This brief analysis of the published reports on the morphologic structure of the lymphosarcomas, emphasizes that difficulties are encountered in the diagnosis of the reticulum cell tumors because marked variations of cell structure occur. There is also considerable support for the view that the so-called Hodgkin's sarcoma is a reticulum cell form of lymphosarcoma. Reticulum cell lymphosarcomas in several patients had some of these complex features of tissue structure, which in biopsies posed diagnostic problems.

Case 1.—A white male aged 24 years entered St. Luke's Hospital in care of Doctor Harold Steinberg for the ninth time on January 27, 1950 and died on February 21, 1950. His first admission in May, 1946 was for the ligation of varicose veins of the right leg. He came again in January 1948 because of malaise for three or four months, a nodose swelling of the left side of the neck for six weeks, a loss of ten pounds in weight for four weeks and fever for one week. The left side of his neck had a painless mass the size of an orange, and below this in the supraclavicular fossa was a similar smaller mass. A small node was in the right axilla. Tissues removed from the mass in the neck were diagnosed as reticulum cell lymphosarcoma. (Figure 1 A). The lower edge of the spleen was palpable, the blood at this time had no significant changes. He received roentgen-ray therapy and reentered the hospital in January 1949 because of chills and fever for a month. His spleen was palpable, the blood had 4,110,000 erythrocytes, and 1,300 leucocytes per c.mm. and 11.7 gms. percent hemoglobin. Of 100 leucocytes 29 were lymphocytes, 27 were monocytes, 19 were neutrophil polynuclear and 25 were band forms. Obviously, the condition of the formed elements of the blood was abnormal. He was given a blood transfusion and discharged, but returned at various times to the hospital for blood transfusions and nitrogen mustard therapy. When admitted finally he was chronically ill but appeared to be in good nutrition, had a fever and a few small nodes in the neck. His blood contained 2,330,000 erythrocytes and 1,100 leucocytes per c.mm., the hemoglobin was 6.9 gms. percent. Among 50 leucocytes were 10 lymphocytes, 1 monocyte, 19 neutrophils, 19 band forms and 1 abnormal lymphocyte. A mediastinal shadow observed in previous roentgen films had disappeared. Despite the many blood transfusions he had received, the patient was anemic and had a marked leukopenia. He died on the 21st day of his final admission.

The necropsy examination was limited to the trunk. The body weighing 188 pounds had an old biopsy scar on the left side of the neck and a recent biopsy wound of the sternum. The lymph nodes in the neck, the axillae and elsewhere were small. Each pleural space had 50 to 100 cc. of hemorrhagic fluid. The serous surfaces had myriads of petechial and larger hemorrhages. The heart weighed 400 gms. There were no changes of the valves or myocardium, but under the endocardium were petechial hemorrhages. The kidneys weighed 235 and 240 gms. They were pale, swollen and the renal pelves and peripelvic fat had extensive recent hemmorrhages. The liver weighed 2800 gms., the spleen 780 gms. The tissues of the hyperplastic spleen had many hemorrhages, so also the lining of the stomach, bowel, and the edematous lungs. The cancellous portions of the sternum, ribs and vertebrae had focal deposits of grey tissue but no destruction of the bone.

Although the lymph nodes were small, extensive

portions in the histological preparations were replaced by hyaline scars or fibrillar stroma. In the interstices of the stroma and about the hyaline scars were large protoplasmic reticulum cells. The lymphoid tissues of the Malpighian corpuscles of the spleen had similar changes, and the splenic pulp had many large phagocytes laden with granular blood pigment. Small focal hyaline scars and masses of reticulum cells were in the portal systems of the liver.

Remarkable changes were found in the bone marrow. Here extensive portions of the marrow tissues were replaced by large protoplasmic reticulum cells with a little fibrillar stroma, and without destruction of the bone trabeculae. (Figure 1 B). These tissues, without the information gained by the examination of the biopsied lymph nodes would present a real problem in interpretation and diagnosis. The biopsy of the initially enlarged cervical lymph nodes had a diffuse growth of large reticulum cells, some with one or more lobed nuclei (Figure 1 A). Among these cells were some in mitosis. This morphologic structure of the tissues and the evidence of growth activity of the cells provided the basis for the histologic diagnosis of reticulum cell lymphosarcoma.

The illness of this patient, which extended about two years, was manifested at first by fever and a sudden enlargement of the cervical lymph nodes. With roentgen radiation and nitrogen mustard therapy during the first stages of the disease, the large cervical lymph nodes disappeared. Then bouts of fever appeared and a severe anemia and leukopenia. The necropsy disclosed that extensive portions of the bone marrow were replaced by large reticulum cell lymphosarcoma tissues.

Case 2.—A white woman, aged 50 years at the time of her death on September 10, 1950 first entered St. Luke's Hospital in the care of Doctor Robert Galt in March, 1946 because of painful, swollen and stiff joints of her hands and feet. Roentgen films disclosed demineralized bones of the hands but no changes of the joints, an osteoarthritis of the spine, and a diffuse peribronchial thickening of both lungs, especially of the lower lobes which was ascribed to chronic bronchitis. Symptoms of cholecystitis then led to the removal of her gallbladder which contained several concretions. She reentered the hospital on September 3, 1948 because of dyspnoea. Roentgenograms demonstrated mottled opacities in each lower lobe of the lungs and increased bronchovascular and hilar markings. She was treated symptomatically and discharged, but returned on October 8, 1948 because of nausea and vomiting. Two days later she was

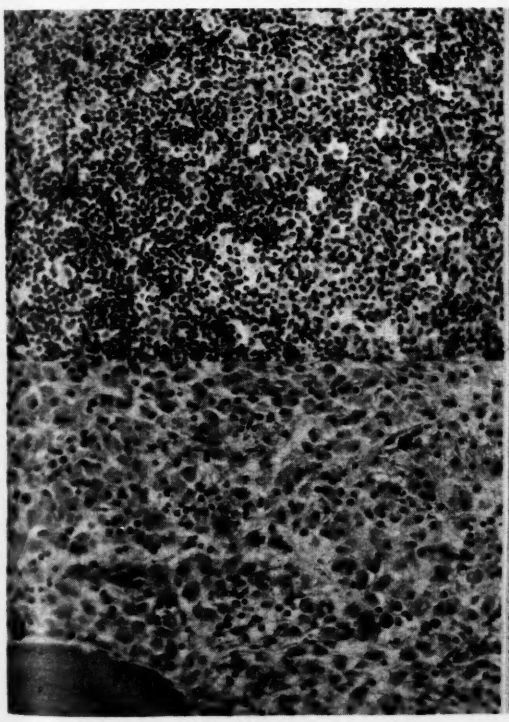

Figure 1. A. Photomicrograph illustrating the tissues in the biopsied lymph node of Case 1 with the large reticulum cells and the lymphocytes. B. Photomicrograph illustrating the marked replacement of the marrow tissues by reticulum cells in bone obtained by necropsy of Case 1.

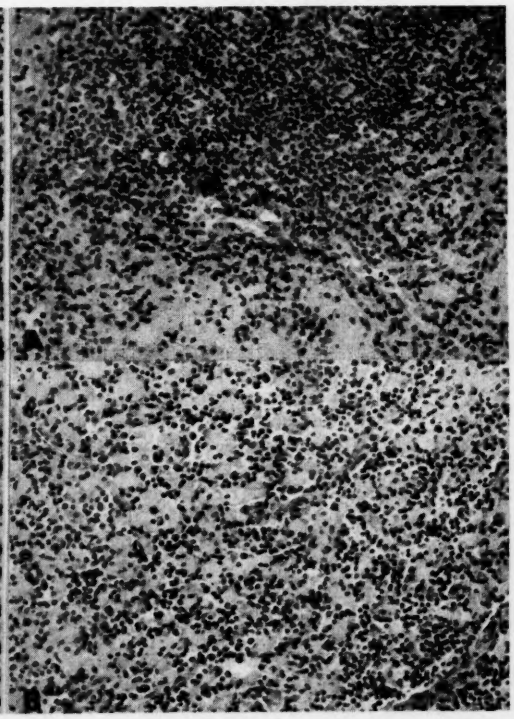

Figure 2. Photomicrograph illustrating the masses of hyaline material in the lymph node biopsies of Case 2. Note the reticulum cells in the crevices of the hyaline material, as well as the lymphocytic cells.

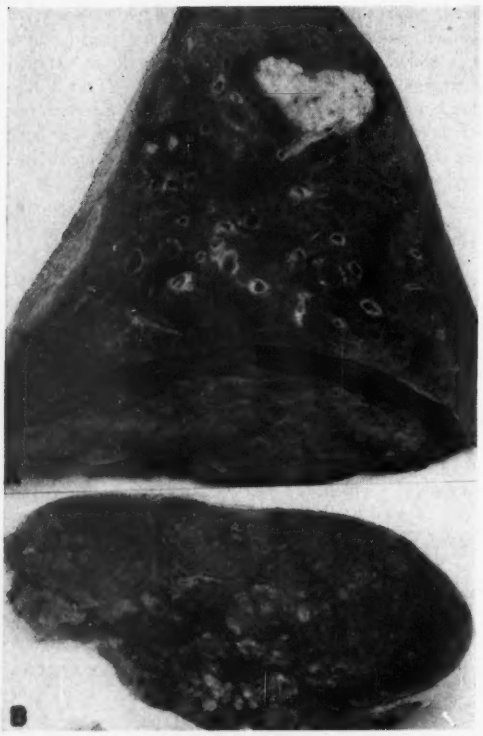

Figure 3. A. Photograph illustrating the consolidated left lung tissues and the grey tumor nodule in Case 2. B. Photograph illustrating a large lymph node with masses of hyaline material (necropsy Case 2).

released with the diagnosis of acute gastroenteritis. She returned on March 6, 1950 because of shortness of breath, hoarseness and paroxysms of coughing for several months. Her temperature ranged from normal to 101°F. At this time moderately enlarged lymph nodes were found in the right cervical region and in the left axilla. One removed from the left axilla had large masses of hyaline material associated with small groups of large mononuclear cells, tissues that were regarded as a form of reticulum lymphosarcoma. (Figure 2 A). Similar tissues were found in a cervical lymph node then removed for diagnostic confirmation (Figure 2 B). Both lower lobes of the lungs, especially the left, had decreased breath sounds, and roentgenograms had shadows that were interpreted as metastatic tumor. The blood at this time had no significant changes. The patient was discharged with the diagnosis of lymphosarcoma and was given roentgen therapy. The cough and dyspnea persisted, the erythrocytes and leucocytes of the blood decreased, the liver, and inguinal lymph nodes became enlarged. Finally, she returned to the hospital on July 31, 1950 with marked dyspnoea, chills and fever, marked cachexia, cyanosis of the face, large painless, fixed cervical lymph nodes, consolidation of the lower lobe of the right lung, and rales throughout each lung. Despite nitrogen mustard intravenously and supportive therapy, her respiratory distress continued, ulcers appeared in the oral mucosa and death followed on September 18, 1950.

The complete necropsy of the emaciated body (weight 78 pounds) demonstrated large axillary, inguinal, iliac, perioaortic, parabronchial and biliary lymph nodes ranging to 4 cms. dia. Surfaces made by cutting all of these lymph nodes had many large masses of opaque friable hyaline material (Figure 3 B). Each pleural space contained about 300 cc. of a limpid yellow fluid. The right lung weighed 630 gms., the left 770 gms. The pleura of the lungs was roughened by torn fibrous adhesions. The lobes of both lungs were contracted and firm. Surfaces made by cutting had diffusely distributed, firm non-crepitant grey tissues. Nodules of firm opaque gray-white ranging to 8 mms. dia. were scattered in the lungs, and a nodule of this tissue in the lower lobe of the left lung was 4 cms. in dia. (Figure 3 A). The heart weighed 230 gms., the kidneys 90 and 70 gms., the liver 1260 gms., the brain 1350 gms., and the spleen 230 gms. Gray nodules 1 mm. in dia. were scattered under the capsule and in the parenchyma of the spleen. The liver had the usual lobular structure but no tumor nodules.

The essential portions of the anatomic diagnosis are generalized reticulum cell lymphosarcoma of the lymph nodes and spleen, and diffuse lymphosarcoma invasion of both lungs. The histological examination of many of the lymph nodes demonstrated changes like those observed in the biopsied nodes removed surgically. Large masses of hyaline material replaced extensive portions of the basic tissues. In the interstices and along the margin of this hyaline substances were compressed large reticulum cells, some in mitosis, and lymphocytes (Figure 4 C). The lungs were diffusely invaded by similar tissues and also had foci of an acute or subacute exudative inflammation. The extensive deposition of the hyaline material in the alveoli and basic structures of the lungs was remarkable (Figure 4 A and B). The nodules in the spleen had similar masses of hyaline material and compressed reticulum cells. The portions of bone marrow examined were not involved.

Case 3.—A white woman, aged 65 years, entered St. Luke's Hospital on January 25, 1951 in the care of Doctor N. C. Gilbert because of pain in the chest radiating to the back. This pain, present for six months, had gradually increased in severity. She had lost 30 pounds in weight and for a month had noted weakness and a low grade fever. Night sweats, a dry non-productive cough and edema of the ankles were other symptoms. The lungs and the heart had the usual physical findings, but the left upper quadrant of the abdomen, lateral to the rectus muscle was tender. Further examinations by Doctor William J. Baker led to a left nephrectomy on February 6, 1951. The large mass of left kidney and tumor tissues removed surgically was 20 cms. long, at the upper pole 12 cms. wide and 9 cms. thick, and weighed 934 gms. (Figure 5 A). Hemisection frontally from the lateral edge to the pelvis disclosed renal tissues only as a

brown fringe along the margin of the lower 9 cms. The tumor tissues immediately above completed the contour of a large kidney but the upper 10 cms. of the mass were lobulated gray tumor tissues entirely apart from the kidney itself. The surfaces so made by cutting were soft gray, slightly fibrillar but without contrasting markings. They were firmer than the white substance of the brain, but the same in color. There were small focal hemorrhages. Histologically the tumor tissues were highly cellular and had only a scanty supporting stroma in fibrils. Small or medium sized cells with a little granular cytoplasm and darkly stained vesicular nuclei formed the bulk of the tissues in the histological preparations (Figure 5 B). They had the features of primitive reticulum cells and many were in mitosis. The patient received extensive radiation therapy and transfusions of blood. When readmitted to the hospital on March 31, 1951 she had a moderate anemia and a slight fever. Symptomatic treatment was ineffective and she died on April 7, 1951.

Figure 4. A. and B. Photomicrographs illustrating the masses of hyaline collagenous material deposited in the lungs and replacing the tissues (necropsy Case 2). C. Photomicrograph illustrating the hyaline deposits in the lymph nodes obtained by necropsy of Case 2.

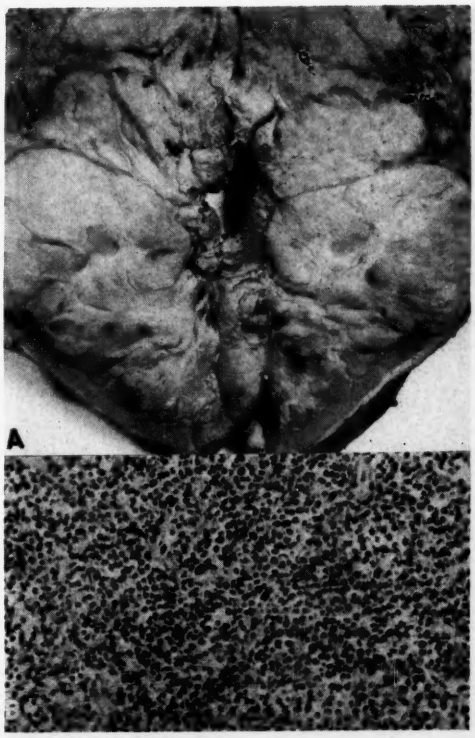

Figure 5. A. Photograph of the surgically excised left kidney (Case 3) illustrating the extensive growth of lymphosarcoma tissues. B. Photomicrograph illustrating the reticulum cell structure of this tumor.

The necropsy of the trunk disclosed no enlarged cervical or axillary lymph nodes. The peritoneum was smooth, moist and glistening. Masses of firm gray tumor tissues extended into the broad ligaments from the left and right sides of the small pelvis. The left ovary was 3 by 2 by 1.3 cms., the right was a mass of gray tumor tissue 6 by 4 by 3.5 cms., fused to the mesosigmoid and sigmoid colon. Considerable gray tumor tissues were around the uterus and the urinary bladder. The right pleural space contained 900 cc. of a dark yellow fluid and there were a few fibrous adhesions between the lung and the parietal pleura. The right parietal pleura had many small nodules of gray tumor tissues. The left pleural space was obliterated by fibrous adhesions. A mass of firm gray tumor tissues 9 by 6 by 6 cms. occupied the left kidney fossa. The parabronchial lymph nodes also had nodules of gray tumor tissue. Both suprerenal glands were masses of gray tumor tissues 6 to 7 cms. in dia. and with foci or necrosis 2 cms. in dia. The right suprarenal gland with tumor tissues weighed 180 gms.; the tumor tissues in the left were continuous with the mass in the left renal fossa. The right kidney weighing 160 gms. had many nodules of gray tumor tissue ranging to 1.5 cms. dia. The spleen weighed 140 gms., the liver 1500 gms. Neither had nodules of

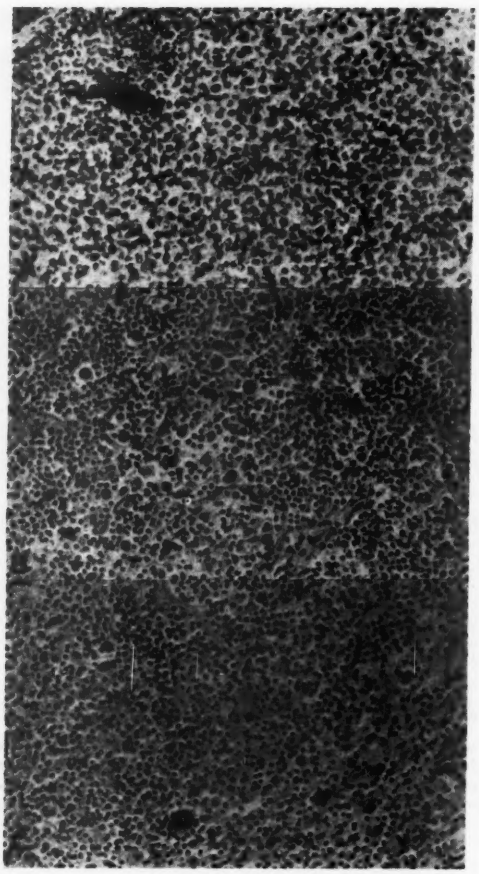

Figure 6. A. Photomicrograph illustrating the reticulum cell sarcoma tissues in the lymph node biopsy of Case 4. B. and C. Photomicrographs illustrating the structure of the sarcoma tissues in the lymph node biopsy of Case 5.

tumor tissues. The essentials of the anatomic diagnosis are reticulum cell lymphosarcoma of the right kidney, suprarenal glands, right pleura, right ovary, peritoneum, and of the tracheobronchial and periaortic lymph nodes; recurrent reticulum cell lymphosarcoma of the left renal fossa; healed surgical left nephrectomy; etc.

The tumor tissues obtained during the necropsy had a structure similar to those in the kidney tissues removed surgically. The bone marrow examined had no tumor tissues.

Case 4.—A white male aged 55 years entered St. Luke's Hospital in the care of Doctor Grant H. Laing in November 1949 because of a swelling of the left side of his neck which had been present for eleven months. When the mass appeared it grew rapidly to the size of an orange, but with external heat became much smaller. Three months before coming to the hospital, the left axilla became tender and the cervical mass increased in size. Physical examination disclosed enlarged cervical lymph nodes and a palpable spleen. A lymph node 1 cm. in maximum diameter was removed from the left side of the neck for histological examination. Some of the lymph nodules of this node had the usual structure but others were replaced by masses of medium sized reticulum cells with a granular cytoplasm and large vesicular nuclei with chromatin granules. (Figure 6 A). Some of these cells were in mitosis. Growths of these reticulum cells extended from the lymph nodules into other portions of the lymph node. While many of the cell masses had little stroma, others had stroma in fine fibrils. The diagnosis of reticulum cell lymphosarcoma was made despite the small size of the lymph node removed. Other laboratory examinations disclosed a high sedimentation rate, reversal of the albumin-globulin ratio, and a slight anemia. Roentgen radiation therapy was given during the 36 days he remained in the hospital. He returned on March 4, 1950 because of hematemisis and marked weakness. His blood had 1,900,000 erythrocytes and 8,600 leucocytes per c.mm. and 5.4 gms. percent hemoglobin. Among 100 leucocytes were 24 lymphocytes, 37 neutrophils, 14 monocytes, 13 band forms, 2 metamyelocytes, and 10 atypical lymphocytes. He received whole blood transfusions, but rapidly grew worse and died on the eleventh day following his second admission.

The necropsy of the trunk and neck demonstrated large mediastinal, cervical, abdominal, periaortic, biliary and splenic lymph nodes. The large liver, weighing 4325 gms., had much gray tumor tissue; the spleen weighing 150 gms. had many small gray nodules. Histological examination of the lymph nodes demonstrated extensive replacement by small lymphocytes. The liver tissues were extensively infiltrated by similar cells as was also the spleen. Large portions of the bone marrow had similar cells but without destruction of the osseous tissues. The diagnosis was generalized lymphocytic lymphosarcoma.

Case 5.—A white male, aged 38 years, entered St. Luke's Hospital in the care of Doctor N. C. Gilbert for the third and final time on February 4, 1951 and died on February 25th. A cervical lymph node 2.5 by 2 by 1.5 cms., removed during his first admission on May 25, 1948, had little of the basic lymph node tissues. The cellular tissues had many lymphocytes and large cells with a granular cytoplasm and a vesicular nucleus (Figure 6 B and C). Some cells had a large lobed nucleus or more than one nucleus. There were a few polynuclear leucocytes. The stroma varied in amount. It was in fine fibrils and also coarse masses. Among the large cells were some in mitosis. The diagnosis was reticulum cell sarcoma.

Roentgen radiation and several courses of nitrogen mustard therapy were given. He returned to the hospital in November 1950 because of anemia, marked weakness and hydrothorax. Fluids collecting in the chest were removed repeatedly. When finally admitted his blood had 3,430,000 erythrocytes and 12,900 leucocytes per c.mm. and the hemoglobin was 8.6 gms. percent. The total plasma proteins were 4.38 gms. percent of which 1.8 gms. percent was albumin.

The essential portions of the examination of the head, neck and trunk are in the following statements. The firm gray nodular lymph nodes in the right and left axillae ranged to 2.5 cms. dia. The abdomen contained about 200 cc. of a clear yellow fluid. A hard mass of tumor tissue at the base of the contracted urinary bladder occupied the floor of the small pelvis. The lower portion of the omentum had myriads of gray tumor nodules as large as 4 cms. dia. The lower edge of the spleen extended to 8 cms. below the costal arch. A mass of gray tumor tissue 8 by 3.5 by 3 cms. was above the splenic flexure of the colon. The liver weighed 2080 gms. and had many gray nodules ranging to 4 mms. dia. Tumor tissues extended into the mesentery of the large and small bowel and the lymph nodes. The right pleural space had 2200 cc. of a turbid yellow fluid, the left had 700 cc. The lower thoracic and the abdominal portions of the aorta were encased in large lymph nodes and tumor tissues. The heart weighed 210 gms., the edematous right lung 810 gms., and the compressed left lung 350 gms. The right kidney with multiple gray nodules ranging to 1 cm. dia. weighed 180 gms. The right suprarenal gland invaded by tumor tissues weighed 20 gms., the left suprarenal gland had been destroyed by tumor tissues. The left kidney weighed 260 gms. The hilum was infiltrated by tumor tissues and many nodules ranging to 1.5 cms. dia. were in the parenchyma. Nodules of tumor tissue extended along the upper edge of the pancreas. The spleen weighing 420 gms. had many gray tumor nodules 1 to 4 mms. dia. A mass of tumor tissue 11 by 18 by 4 cms. involved the left leaf of the diaphragm and many vertebrae had nodules of gray tumor tissues. The main portions of the anatomic diagnosis are: recticulum cell lymphosarcoma of the cervical, axillary, and periaortic lymph nodes, the liver, the spleen, the kidneys, the suprarenal glands, the peritoneum, and the cervical, thoracic and lumbar vertebrae; bilateral hydrothorax; compression atelectasis of the right lung; left fibrous pleuritis; etc. Sections from many of the tumor tissues had fibrillar stroma infiltrated by large reticulum cells with lobed or several nuclei and associated with small lymphocytes and like the biopsy tissues. Masses of these tumor tissues were in the liver, kidneys, spleen, suprarenal glands, hypophysis, peritoneum and bone marrow.

Case 6.—A white male, aged 53 years, entered St. Luke's Hospital on August 29, 1950 in the care of Doctor R. C. Roskelley because of enlarged cervical and axillary lymph nodes and a large abdominal mass. A cervical lymph node removed for histological examination had tissues that were diagnosed recticulum cell lymphosarcoma. (Figure 7 A). He then received

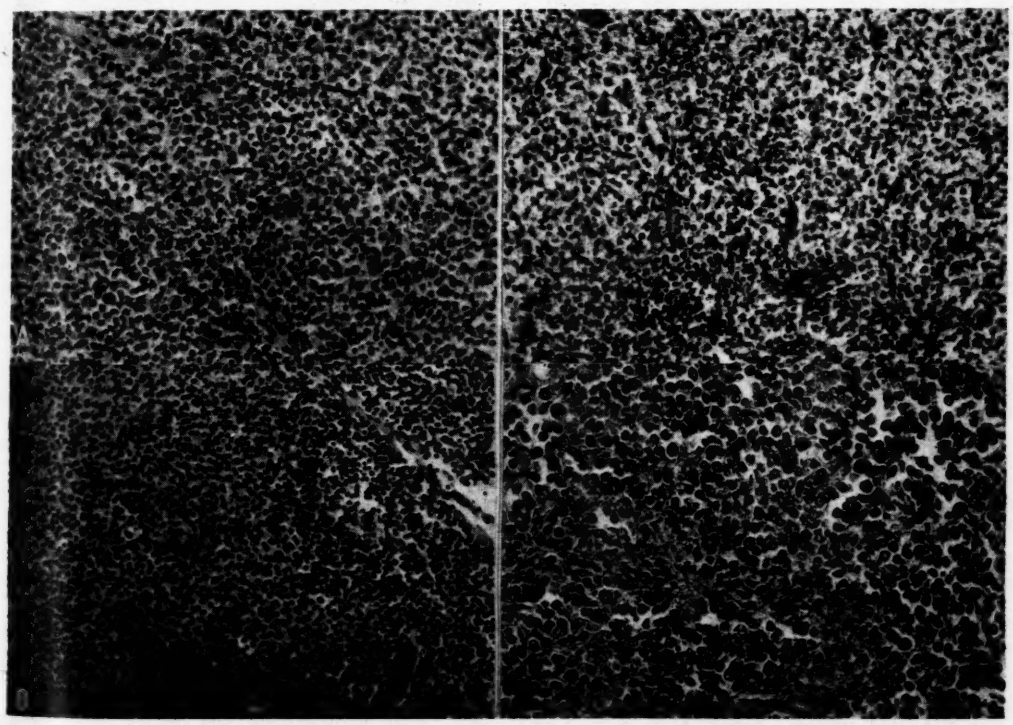

Figure 7. Photomicrographs illustrating in A the structure of the lymphosarcoma of the necropsy material and in B, of the lymph node biopsy in Case 6.

Figure 8. Photomicrographs illustrating in A, the structure of the lymphosarcoma tissues of the lymph node biopsy and in B, of the tumor tissues obtained by necropsy in Case 8.

roentgen radiation therapy and nitrogen mustard, but returned to the hospital in October 1950, markedly anemic and leukopenic for multiple blood transfusions. When finally admitted on December 19, 1950 he complained of abdominal pain, nausea and vomiting. The supraclavicular and inguinal lymph nodes were large, and a hard mass was in the epigastrium. The blood had 3,310,000 erythrocytes and 6,700 leucocytes per c.mm. and the hemoglobin was 8.4 gms. percent. He failed to improve with transfusions of blood and died on March 8, 1951.

The emaciated body weighed 90 pounds. The axillary lymph nodes ranged to 2 cms. dia. and contained gray tumor tissues. A mass of hard gray tumor tissue 13 by 9 by 6 cms. was in the lesser space of the peritoneum and root of the mesentery of the small bowel. The left renal vein was encased in this mass. Each pleural space contained turbid brown fluid, the right 200 cc., the left 230 cc. Nodules of gray tumor tissues 2 cms. in diameter were on the visceral surface of the sternum, others similar were in the thymic body, compressed the large mediastinal blood vessels and surrounded the trachea. Tumor tissues extended along the spine and around the abdominal aorta and myriads of nodules 1 to 5 cms. dia. covered each parietal pleura. The inferior cava and the renal veins were compressed by the nodular tumor tissues. The biliary lymph nodes, grey with tumor tissues ranged to 2.5 cms. diam. The pancreas was embedded in the large mass of tumor tissues and was markedly infiltrated by them. The spleen weighed 150 gms., the liver 1220 gms. and both had nodules of gray tumor. The hyperemic and edematous right lung weighed 350 gms., the similar left weighed 500 gms. The essentials of the anatomic diagnosis are generalized lymphosarcoma of the lymph nodes, spleen, liver and pancreas with compression of the large blood vessels of the trunk. Histological preparations of tumor tissues from many places had masses of small lymphocytes mingled with reticulum cells (Figure 7 B).

Case 7—A white woman, aged 64 years, entered St. Luke's Hospital on April 17, 1951 in the care of Doctor Robert Galt with acute respiratory distress and died on May 14, 1951. She was cyanotic, the left side of the chest was dull to precussion, the blood had 4,720,000 erythrocytes and 32,250 leucocytes per c.mm. of which 65 percent were neutrophil polynuclear, 30 percent were band forms, 2 percent were lymphocytes, and 2 percent were monocytes. Repeated examinations of the blood demonstrated a leucocytosis ranging between 35,000 and 76,600. Closed drainage of the chest and antibiotics were used. Despite many laboratory examinations no cinical diagnosis other than an indolent pneumonia of the left lung with empyema was made.

The essentials disclosed by a complete necropsy are contained in the following statements. The left pleural space was obliterated by dense fibrous adhesions. Extending posteriorly from the apex to the diaphragm was a drained empyema pocket 20 by 8 by 5 cms. which at the apex extended forward to an undrained pocket 5 cms. in dia. The right pleura contained about 400 cc. of a yellow slightly turbid fluid. There were

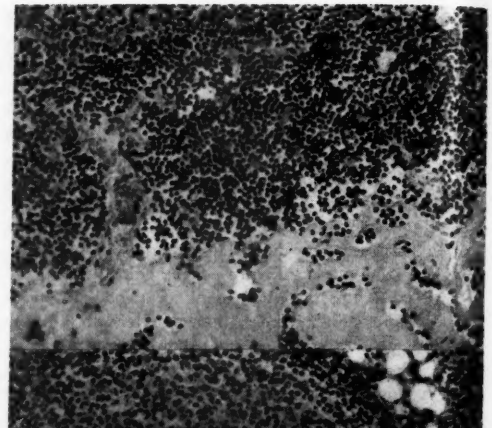

Figure 9. A. Photomicrograph illustrating the hyaline masses and lymphocytic infiltration of the left lung in Case 7. B. Photomicrograph illustrating the giant follicular hyperplasia of some lymphosarcomas.

no adhesions between the chest and the right lung. The firm lymph nodes at the bifurcation of the trachea, black with carbon, together were 3 by 3.5 by 1 cms. The heart weighed 240 gms. The compressed right lung weighed 440 gms., the consolidated left lung 730 gms. The kidneys, liver, spleen, brain and other viscera of the body had only minor changes, unrelated to the disease of the lung. The lymph nodes of the body were not enlarged except the parabronchial as mentioned. They had several small foci of caseation necrosis. The lower lobe of the left lung was markedly consolidated and covered with a shaggy brown fibrinous exudate. The upper lobe also was firm, dark red and non-crepitant. Surfaces made by cutting the lower lobe of the left lung were firmly consolidated throughout and grey. Small portions toward the upper pole of this lobe were dark red and firm. The upper lobe of the left lung was atelectatic, hyperemic and edematous dark red tissue. Histological examinations of the consolidated tissues of the lung demonstrated a complete replacement of the lung tissues by masses of small darkly stained mononuclear cells (small lymphocytes). (Figure 9 A). Among the lymphocytes were larger cells, some multinucleated, and masses of hyalinized connective tissue.

Case 8—An adult white woman, aged 49 years, entered St. Luke's Hospital in the care of Doctor G. K.

Fenn for the third time on March 10, 1951. Her first admission the preceding November was for edema of the left leg and a left axillary mass for about two months. The edema began in the left foot and ankle region and gradually involved the entire leg. The disorders were diagnosed arthritis and cardiac disease. The painless mass in the left axilla was noticed in October 1950. A cervical lymph node removed in November 1950 was diagnosed as reticulum cell lymphosarcoma (Figure 8 A). Roentgen radiation therapy was given. Frequent thoracenteses were required to remove opalescent fluids from the pleural spaces. When admitted finally she was dyspoenic and had abdominal distention. The blood had 4,040,000 red blood cells and 4800 leucocytes per c.mm. and 11.4 gms. percent hemoglobin, 74 percent of the leucocytes were neutrophilic. Shortly after her final admission to the hospital her temperature rose to 102°F. and for six days fluctuated thereabouts. Death occurred on March 18, 1951.

The essentials of the anatomic diagnosis are. reticulum cell lymphosarcoma of the cervical, periaortic, tracheobronchial and retroperitoneal lymph nodes; lymphosarcoma invasion of the liver, kidneys, and left suprarenal gland; lymphosarcoma compression of the aorta, inferior vena cava, left renal artery and left ureter; bilateral chylothorax; chylous ascites; edema of the legs; anasarca; etc.

The abdomen contained about 1000 cc. of an opalescent chylous fluid. In the root of the mesentery was a nodular mass of tumor tissue 10 by 8 by 4 cms. and many small nodules of gray tumor tissues were in the mesentery. Both lungs were compressed by pleural fluids, on the right side 4200 cc., on the left side 3250 cc. The periaortic abdominal lymph nodes formed a nodular mass which began at the bifurcation below, extended up 18 cms. and markedly compressed the aorta, its branches, and the inferior cava. The parabronchial lymph nodes were 3.5 by 3 by 1.5 cms. and contained gray tumor tissues. The right kidney weighed 160 gms. and had near the center of the convex edge a gray nodule 6 mms. in dia. The right suprarenal gland had the usual structure, the left was encased in tumor tissues. The left kidney weighed 140 gms. and had two gray nodules each 4 mms. in dia. The spleen weighed 160 gms. and had the usual tissue structure. The liver weighed 1400 gms. and in the right lobe were nodules of tumor tissue 2 to 8 mms. dia., the left lobe had three as large as 3 mms. in dia. The compressed right lung weighed only 280 gms., the similar left lung 250 gms. The pleural surfaces were smooth, the lung tissues were markedly compressed and atelectatic. The brain, heart and other viscera, had no significant changes.

Sections of some of the tumor nodules had cellular tissues with a scanty stroma, and the sarcoma cells seemed larger than those in the biopsied lymph node. Other tumor tissues had these cells and others large and with lobed nuclei.

COMMENTS

The inital symptoms presented by these patients with lymphosarcoma include fever and general malaise. Almost all had enlarged cervical, axillary or inguinal lymph nodes and biopsies of these nodes enabled the diagnosis of lymphosarcoma. The nature of the chronic disorder of the lungs in Case 2 was not determined until the histological examination of an axillary lymph node disclosed the presence of reticulum cell sarcoma in the patient. By inference, although uncommon, the lungs were presumed to be involved by the tumor. This later was found by necropsy to be true. In Case 4 the biopsy material had a reticulum cell sarcoma structure, and the tissues obtained by necropsy had a lymphocytic. The lymphocytic sarcoma of the lung in Case 7 during her illness was considered to be an indolent form of pneumonia of the left lung with empyema. The initial symptoms of Case 8 were edema of the left foot and leg, thought then to be cardiac and arthritic diseases. Later, biopsy of a cervical lymph node established the diagnosis of reticulum cell lymphosarcoma and the necropsy finally demonstrated compression of the inferior cava and pelvic veins by sarcoma tissues.

The roentgen radiation and nitrogen mustard therapy used in the treatment of these patients caused a marked decrease in the size of the enlarged lymph nodes, and in that respect, clinical improvement of the patients. However, a severe anemia and leukopenia developed with finally a cytopenic purpura. Nitrogen mustard and the more recently used triethylene melamine depress the hematopoietic tissues, especially those of the bone marrow.[8] However, purpura occurs in lymphosarcoma patients without roentgen radiation or nitrogen mustard therapy and accordingly, the purpuric state in the later stages of the disease cannot be ascribed solely to the effects of the therapy. Histological studies of tissues obtained by necropsy demonstrated that extensive portions of the bone marrow in Case 1 were replaced by the reticulum lymphosarcoma cells and this patient had a severe purpura.

As mentioned in the introduction, the classification of the lymphosarcoma into the lymphocytic or lymphoblastic and the reticulum cell forms is generally accepted. The giant follicular hyperplasia (Brill Symmers disease Figure 9B) of enlarged lymph nodes may be a lymphocytic form of lymphosarcoma. The large lymphocyte or lymphoblastic lymphosarcoma is also recognized. The range of cell structure among the

reticulum cell lymphosarcomas can present diagnostic problems in the histologic examination of biopsied lymph nodes. Tumor tissues composed largely of medium sized cells with a pale granular cytoplasm and vesicular nuclei with chromatin granules may be placed at one end of this series. Perhaps next in the group are those tissues with more fibrillar stroma having in its meshes lymphocytes and large mononuclear cells with vesicular round or lobed nuclei, and ranging in size to giant forms with one or more lobed nuclei. The presence of leucocytes, some with eosinophil granules, poses the diagnostic problem of a Hodgkin's disease. A careful search among these large cells can often demonstrate some cells in mitosis. These give weight to concluding that the tissues are neoplastic, hence lymphosarcoma and not a lymphogranuloma, namely Hodgkin's Disease. Pathologists holding closely to these standards of tissue analysis, with experience, will use less and less the term "Hodgkin's Disease".

When the biopsied lymph nodes have masses of hyaline material with crevices containing the large cells mentioned, reticulum cell lymphosarcoma ranks high in the list of possible diagnoses. Specific stains will emphasize the collagenous nature of these hyaline deposits. But not all lymphosarcomas remain in their original or even pure forms. Some have both the lymphoid tissue as well as the reticulum cell elements.

Invasion of the bone marrow with little or no destruction of the bone trabeculae is common with lymphosarcoma, both with the lymphocytic or the lymphoblastic forms and the reticulum form. The extensive invasion of the bone marrow of Case 1 by the large reticulum cells emphasizes this feature.

SUMMARY

Sarcomas arising in lymph node or in lymphoid tissues of viscera initially cause symptoms of fever and malaise associated with enlargement of some group or groups of lymph nodes. The diagnosis of the disease at this time is established by the histological structure of lymph node tissues removed for microscopic examination.

The lymphosarcoma tissues observed in these tumors are the lymphocytic, the lymphoblastic and the reticulum cell. The giant follicular hyperplasia (Brill-Symmers disease) observed in biopsied lymph nodes can be an initial phase of a lymphosarcoma, usually the lymphocytic. The range in structure of the reticulum cell form of lymphosarcoma is large. Sarcomas composed largely of medium sized reticulum cells with a pale granular cytoplasm and vesicular nucleus with chromatin granules may be placed at one end of this series. Next, perhaps, are those tissues with more fibrillar stroma supporting in its meshes lymphocytes and large mononuclear cells with round or lobed nuclei and ranging in size to giant forms with one or more lobed nuclei. Leucocytes with eosinophil granules in these tissues pose the diagnostic problem of a Hodgkin's Disease, but a careful search among these large cells frequently demonstrates some in mitosis. This favors the conclusion that the tissues are neoplastic, hence reticulum cell lymphosarcoma, and not lymphogranuloma, namely Hodgkin's Disease. With these standards of tissue analysis, pathologists will use much less the diagnosis of "Hodgkin's Disease".

When biopsied lymph nodes contain masses of hyaline material with crevices containing the large cells mentioned, reticulum cell lymphosarcoma ranks high in the list of possible diagnoses.

Not all lymphosarcomas remain in their original cell structure or occur in pure forms. Some have both the lymphoid tissue as well as the reticulum cell elements.

Invasion of the bone marrow with little or no destruction of the bone trabeculae is common with lymphocytic or lymphoblastic and the reticulum cell forms of lymphosarcoma.

The late stage of lymphosarcoma in patients is frequently associated with severe anemia, leukopenia and cytopenic purpura. This may result from the radiation or nitrogen mustard (or analogous substances) therapy, or the effect of the disease on the hematopoietic tissues, such as replacement of the bone marrow by tumor. However, patients with lymphosarcoma, not so treated, have similar blood dyscrasias.

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AMUSING STORY DEPARTMENT

Amusing incidents are common in country practice. A colored boy walked across the mountain to consult me about a fever he had had for some time. It was about train time and, expecting some mail to come in, I stuck a thermometer in his mouth and crossed the street to the post office. Some friends joined me there and we went over to the hotel for lunch. After we had sat and talked for quite a while, I suddenly remembered the patient. When I removed the thermometer, he said, 'Doctor, this little tube has done me more good than any other treatment I ever took.' I got a very good patient on the strength of this story, which was broadcast by my friend, U.S. Senator Willis Roberston. A prominent Roanoke attorney came to Richmond to consult me about his dizziness. I asked him why he came to me, and he said, "I came, Doctor, on account of that thermometer story. A doctor who could keep a thermometer in a patient's mouth for three hours and then add five minutes more to it must be resourceful." *Claude C. Coleman, M.D., Some Observations On The Practice of Medicine, South. Med. & Surg., July 1952.*

THE HONEST PHYSICIAN

Of all the elements in a successful medical career, the most important is that of honesty. A dishonest physician, and particularly a dishonest surgeon, has more opportunity to injure his fellow man than a bandit who holds the victim up on the highroads.

There is a temptation on the part of a young man impatient to get on to do unnecessary surgery. One young man recently said to me, "I have got to make a living." I asked him, "Why, if you have to have money whether or not you get it honestly, do you not rob a bank?"

Unnecessary practice on patients is rarely risky to a doctor but it destroys his character, and often his reputation. Someone has said he did not care to employ either a doctor who has no patients, or one who has too many.

In an editorial written shortly before his untimely death, Dr. John S. Lockwood likened choosing a surgeon to choosing an airplane pilot, but cited the important difference that if the pilot makes a mistake, he generally goes down in the crash with his passengers. *Claude C. Coleman, M.D., Some Observations On The Practice Of Medicine, South. Med. & Surg., July 1952.*

NEWS OF THE STATE

ADAMS

Society News.—Dr. Frederick H. Falls, professor and head of the department of obstetrics and gynecology, University of Illinois College of Medicine, discussed "Early Diagnosis of Cancer of the Uterus," before the Adams County Medical Society in Quincy, October 13.

Hospital News.—A new adlition to Blessing Hospital, Quincy, was dedicated recently. In addition to seventy-five beds for patients, the new structure will provide a new administrative unit, emergency room, x-ray, laboratory and physio-therapy departments and other improvements. Facilities for patients include a pediatric department of twenty-five beds utilizing the entire fourth floor of the new addition and the provision of fifty beds for the care of the chronically ill.

Personal.—Dr. Richard P. Caddick, Quincy, has recently been certified by the American Board of Surgery.—Dr. Hugh Espey, Quincy, addressed the Pike County Medical Society September 25.

CHAMPAIGN

Society News.—Dr. Frank M. Maher, clinical assistant in obstetrics and gynecology, Northwestern University Medical School, addressed the Champaign County Medical Society, October 9, on "Office Gynecology."

Dr. Dallenbach Named County Society Outstanding G.P.—Dr. J. C. Dallenbach, Champaign, was recently chosen as "outstanding general practitioner" by the Champaign County Medical Society. Dr. Dallenbach, who has practiced in Champaign since 1912, was president of the county society in 1921 and again in 1949. He is a past president of the Illinois Elks Association, a member of the advisory board to the Salvation Army, and from 1934 to 1943 was president of the Champaign School Board.

COOK

Dean Olson Goes to Texas.—Dr. Stanley W. Olson has resigned as dean of the University of Illinois College of Medicine to accept a similar position at Baylor University College of Medicine, Houston, Texas. Dr. Olson had been at Illinois since April 1950. His resignation will become effective January 1.

Herbert Schmitz Honored.—Dr. Herbert E. Schmitz, professor and chairman of obstetrics and gynecology, Stritch School of Medicine of Loyola University, was presented with the annual award of the Illinois Division of the American Cancer Society at its meeting in October.

Joint Meeting of Anesthetists.—Dr. I. W. Magill, anesthesiologist from England, spoke informally at a joint meeting of the Illinois Society Anesthesiologists and the Chicago Society of Anesthesiologists at a dinner meeting in the Congress Hotel, October 21.

Fraternity Installation.—Barry J. Anson, Ph.D., professor of anatomy, Northwestern University Medical School, was the principal speaker at the installation ceremonies of the Sigma Xi Club of the Chicago Medical School. He spoke on "The Story of the Great Plague of London." Officers of the Sigma Xi Club were chosen: Drs. Piero P. Foa, president; Israel Davidsohn, vice president; Leon H. Strong, secretary, and Jay A. Smith, treasurer.

Chicago Faculty News.—Dr. Walter Palmer gave

several lectures on ulcer and disorders of the intestinal tract at the Seventh Annual Seminar of the Samuel Merritt Hospital, Oakland, Calif.—Dr. Roger Baker addressed the Northcentral Section of the American Urological Association, October 9, on "Electrophysiology of the Ureter."—Dr. David W. Talmage has been appointed assistant professor of medicine at the University of Chicago School of Medicine, coming from the University of Pittsburgh School of Medicine where he was assistant research professor of pathology.—Dr. Huberta M. Livingstone has resigned as associate professor and director of anesthesia at the University of Chicago School of Medicine.—Dr. Lester Dragstedt has been named the Thomas D. Jones Distinguished Service Professor of Surgery at the school.

New Acting Head of Pediatrics.—Dr. Heyworth N. Sanford has been appointed as acting head of the Department of Pediatrics in the University of Illinois College of Medicine, it has been announced by Dean Stanley W. Olson.

Dr. Sanford is filling the vacancy created when Dr. Henry G. Poncher resigned effective Aug. 31, 1952, to affiliate with Valparaiso University and to enter into private practice in his home town, Valparaiso, Ind.

Dr. Sanford has been a member of the faculty of the University of Illinois since 1941 when he was appointed clinical associate professor of pediatrics. He was promoted to full professor in 1944.

His association with Rush Medical College and Presbyterian Hospital dates back to 1928. He was appointed as an instructor in pediatrics at Rush that year, and several continuously there until it was merged with the University of Illinois in 1941.

Dr. Sanford, 58, has served as chairman of the Department of Pediatrics at Presbyterian Hospital since 1946. He has served as president of the medical staff at Presbyterian since 1947. He also has been associated with Cook County Hospital, since 1930, and has been head of the Department of Children's Hematology during the past four years.

He was a member of the Department of Interior's Commission to Puerto Rico, the Virgin Islands, and the Dominican Republic in 1948.

Dr. Sanford was a member of the American Medical Association's Committee to England to study the National Health Act in 1950. He is a past president of the Chicago Pediatric Society, and holds membership in the American Pediatric Society, American Academy of Pediatrics, and in numerous medical societies as well as the American Board of Pediatrics and the Association of Military Surgeons. He served as medical director of the Infant Welfare Society of Chicago from 1928 to 1948.

A graduate of Rush Medical College, Dr. Sanford is the author of more than 80 scientific papers, and has contributed chapters to several pediatric textbooks.

New Exhibit on Heart Opened.—On October 24 a new exhibit dealing with the structure and functions of the human heart was opened at the Chicago Museum of Science and Industry. The exhibit was presented by the Chicago Heart Association and marks a new educational approach in science's battle against heart disease.

Dr. Lewis Discharged from Service.—The first faculty member of the University of Illinois Chicago Professional Colleges to be recalled to military duty during the Korean War has been discharged, and has returned to Chicago.

He is Dr. G. Kenneth Lewis, clinical assistant professor of otolaryngology in the College of Medicine. Dr. Lewis was recalled to active duty as a colonel in the U. S. Army Medical Corps on Sept. 11, 1950. At the time of his recall, he was commanding officer of the 374th Convalescent Center, a 3,000-bed hospital unit.

Dr. Lewis recently completed 24 months of service, most of it as chief of surgery at Fort Campbell, Ky. During his tour of duty, he was presented with the Legion of Merit.

Dr. Lewis, who previously had served for 58 months during World War II, has returned to his private practice. In addition to the University of Illinois, he is affiliated with Illinois Central, South Shore, Woodlawn, and Jackson Park Hospitals.

Special Institute of Medicine Lectures.—Dr. Eugene B. Ferris, professor and chairman of the department of medicine, Emory University School of Medicine, Atlanta, Ga., will deliver the fifth Walter Wile Hamburger Memorial Lecture of the Institute of Medicine of Chicago at the Palmer House, November 28, on "Observations on the Nature and Course of Arterial Hypertension." Dr. Vincent J. O'Conor, professor and head of the department of urology, Northwestern University Medical School, will deliver the presidential address at the thirty-seventh annual dinner and meeting of the Fellows of the Institute, December 2. His presentation will be "Urinary Antiseptics: Past and Present: Fact and Fancy." At a joint meeting of the Institute of Medicine of Chicago and the Chicago Society of Internal Medicine, October 27, the sixth William Allen Pusey Memorial Lecture of the institute was given by Keith S. Grimson, professor of surgery, Duke University School of Medicine, Durham, N. C. His subject was "Current Status of Treatment of Hypertension or Peptic Ulcer by Drugs or Surgery Affecting the Atonomic Nervous System."

Carroll Birch Named "Medical Woman of Year."—Dr. Carroll L. Birch, professor of medicine, University of Illinois College of Medicine, was honored October 2, as the "medical woman of the year" at the eleventh annual joint meeting of the Medical Woman's Association and the Chicago Women's Bar Association. Recently returned after serving one year as dean of Lady Hardinge Medical College in New Delhi, India, Dr. Birch was honored for achievements in clinical medicine, scientific research, teaching executive ability and personal charm, the

Chicago Tribune reported.

Lectures by Charles Bailey.—A series of lectures were given this past month by Dr. Charles P. Bailey, professor of thoracic surgery, Hahnemann Medical College and Hospital, under the auspices of three Chicago chapters of Phi Delta Epsilon fraternity (Northwestern University Medical School; University of Illinois College of Medicine, and Chicago Medical School). The lectures, in honor of Drs. Isaac Abt, Julius Hess and John Sheinin, were: November 18, at Northwestern, on Surgical Treatment of Mitral and Aortic Valvular Disease; Chicago Medical School, November 17, on Recent Advances in the Surgery on Congenital Heart Disease, and University of Illinois, November 19, on Surgical Treatment of Coronary Artery Disease.

Personal.—Dr. Percy Hopkins, Chicago, chairman of the Committee on Medical Service and Prepayment Plans, Council on Medical Service, American Medical Association, addressed the Federation of Employees' Benefit Plans, Inc., at the sixth annual conference in the Hotel Commodore, New York, October 24, on "The Doctor's View of Medical and Surgical Programs."

Grant to Dr. Coburn.—A grant of $20,000 has been made by the Lasdon Foundation of Yonkers, N. Y., to Dr. Alvin Coburn, director of the Rheumatic Fever Institute of Northwestern University Medical School, to further research in that field.

Special Lecture Series on Cancer.—Problems and phases of cancer and cancer treatment and progress to date in the fight against cancer were presented by ten nationally known specialists in a series of weekly lectures at the Northwestern University Medical School recently. The lectures, which were open to the profession, were given in Thorne hall on the Chicago campus.

Subjects and lectures are as follows:

Oct. 6 The Pathology of Radiation Reactions: Dr. Shields Warren, professor of pathology, Harvard Medical school;

Oct. 15 Cancer Frontiers: Dr. Cornelius P. Rhoads, director, Memorial Center for Cancer and Allied Diseases, New York City; professor of pathology, Cornell University Medical college;

Oct. 22 Activities of the National Cancer Institute: Dr. Raymond F. Kaiser, chief, Cancer Control Branch of National Cancer Institute, U. S. Public Health Service;

Oct. 29 Causes of Mammary Cancer in Mice: Dr. John J. Bittner, professor of cancer research, University of Minnesota Medical school;

Nov. 5 Viruses and the Cancer Problem: Dr. Wendell M. Stanley, director of the Virus Laboratory, University of California;

Nov. 12 The Hormone-producing Tumors of the Ovary: Dr. Emil Novak, assistant professor of gynecology, Johns Hopkins University Medical school; associate professor of obstetrics, University of Maryland School of Medicine;

Nov. 19 The Metabolism of Cancer Tissue: Dr. Van R. Potter, professor of oncology, University of Wisconsin Medical School;

Nov. 26 "Fibrocystic" Lesions of the Bone: Dr. Granville A. Bennett, professor of pathology, University of Illinois College of Medicine;

Dec. 3 Bronchogenic Carcinoma: Dr. Edward D. Churchill, professor of surgery, Harvard Medical school;

Dec. 10 Nutrition in Relation to Cancer: Dr. Albert Tannenbaum, director of cancer research, Michael Reese hospital, Chicago.

Chicago Clinics Observe Twenty-Fifth Anniversary.—The twenty-fifth anniversary of the "New Idea" in medical education and research first developed at the University of Chicago clinical departments was celebrated from October 2 through October 4.

Dedicated to the "advancement of medical knowledge," the medical and research center of the university was officially inaugurated on October 3, 1927, when Albert Merritt Billings hospital and the Max Epstein outpatient clinic were opened for patients, and a small group of students began instruction in medicine and surgery. From the very start, the emphasis was placed upon three aims: medical research, medical education, and the most advanced treatment of patients.

To further these ends, the University of Chicago Clinics (the official name) relied upon radically new approaches in methods and organization. One was the creation of the first completely full time staff in a medical school. Even now the Clinics remain unique in this respect. Freed from a dependence upon the fees paid by private patients, and the demands of private practice, the instructors in the medical school were able to devote their full energies to teaching, research, and the care of patients.

A second element was the integration of the new clinical departments with the older departments in the biological sciences, which made unique cooperation available between investigators in all branches of biology and medicine, and even with physical scientists such as chemists and nuclear physicists.

The third innovation was in both the ends and methods of teaching. The faculty committee report recommending the inauguration of the clinics stated: "The aim of the University of Chicago Medical School should not be primarily to increase the number of practitioners." Rather the school has succeeded in "teaching the teachers" of tomorrow's doctors, educating medical investigators, and in stressing "supervised doing" and "problem solving" for the student in direct contact with patients.

Results of the center's "New Idea" are indicated by figures which show a yearly average of 180,000 patient visits to the out-patient clinics, and 170,000 patient days and 36,000 baby days of hospitalization. Of 462 graduates of the Medical School up to 1942 (nearly all those graduated since are still undergoing graduate training or are with the armed forces) 141 are teaching in medical schools or en-

gaged in medical research. And in the advancement of medical knowledge, the clinical departments have contributed an impressive list to the medical revolution of the last quarter century.

Changing with the needs of the times, the emphasis on medical research has shifted. The increasing victory over infectious diseases is leading to more research in the direction of the diseases of maturity—cancer, heart disease, kidney disease, and diseases caused by improper working of the body's glands.

To meet this research shift of emphasis toward the so-called degenerative diseases, the Nathan Goldblatt Memorial Hospital was opened in 1950. Currently building are Argonne Cancer Research Hospital (costing $3,500,000 and built by funds provided by the Atomic Energy Commission), the Charles Gilman Smith hospital, and the new west wing (costing $4,500,000.) These new buildings will raise the value of the entire plant of the university's medical research center to almost $85,000,000. When completed, the number of beds available to patients will increase to 740, as compared with the original 200.

DeWITT

Community News.—The DeWitt County Medical Society was addressed in Clinton, September 24, by Dr. Edward E. Avery, Chicago, on "Newer Aspects of the Treatment of Tuberculosis."—The DeWitt County Tuberculosis Association sponsored the annual tuberculosis skin testing of the students in six high schools of the county recently.

GREENE

Society News.—At a meeting of the Greene County Medical Society in White Hall, September 14, Dr. Carl E. Billings, Chicago, spoke on "Recent Trends in Antibiotic Therapy." Dr. Warner H. Newcomb, Jacksonville, councilor of the Sixth District, was a special guest at the meeting.

KNOX

One Hundredth Anniversary Celebration. — On November 19, the Knox County Medical Society observed the one hundredth anniversary of the first Knox County Medical Society. The present society was organized after the initial one had been inactive for a few years. Dr. Frank M. Huff, Galesburg, is president of the Knox County Medical Society, and Dr. Alexander M. Duff, Galesburg, is secretary. The anniversary meeting was highlighted with a special program arranged by the Scientific Service Committee of the Illinois State Medical Society. Afternoon speakers were Dr. Gilbert H. Marquardt, assistant professor of medicine, Northwestern University Medical School on "Problems in Geriatric Medicine," and Dr. Edwin N. Irons, clinical assistant professor of medicine (Rush), University of Illinois College of Medicine, "Present Concept of Antibiotic Therapy." A fellowship hour and dinner followed a discussion period. The evening speaker was Dr. Warren H. Cole, professor and head of the department of surgery, University of Illinois College of Medicine, on "Intestinal Obstruction."

LAKE

Society News.—Dr. Oglesby Paul, associate professor of medicine, University of Illinois College of Medicine, and assistant attending physician, Presbyterian Hospital, Chicago, discussed "Treatment of Congestive Heart Failure" before the Lake County Medical Society, October 14, at the Lake County Tuberculosis Sanatorium, Waukegan. The society was addressed in September by Dr. Kenneth Sokol, associate in urology, Northwestern University Medical School, on "Kidney Tumors." New members of the society are Dr. Frank Brooks, Highland Park, and Dr. Roy C. Johnston.

LA SALLE

Physician Among Honored Citizens.—Dr. James S. Geen, Utica, was honored by the city of Utica, October 19, as part of the town's centennial celebration. The physician was one of four of the town's citizens who were paid tribute for their contributions to the local community. Dr. Geen, who graduated at Baltimore Medical College, has practiced in Utica for more than fifty-six years. He is a member of the Fifty Year Club of the Illinois State Medical Society. Official congratulations were sent to Dr. Geen by the State Society, through action taken by its Council, and a gift was presented to the physician by the La Salle County Medical Society.

Society News.—"Bronchogenic Carcinoma" was the subject discussed by Dr. Willard Van Hazel, clinical professor of surgery, University of Illinois College of Medicine at its meeting in the La Salle County Tuberculosis Sanatorium at Ottawa, October 9.

MACON

Society News.—Dr. Dean Sauer, professor of surgery, St. Louis University School of Medicine, addressed the Macon County Medical Society in Decatur at the St. Nicholas Hotel, September 23, on "Surgery of Stomach and Duodenum." A dry clinic with case presentations preceded the address.

Personal.—Dr. Charles York recently returned from a vacation in Rhode Island.—Dr. Max Schlosser recently returned from an air trip to London, Austria and Holland, The Netherlands. While in London he attended the Second International Congress of Medicine.

Decatur Physicians Give Quincy Program.—"The Medical Blueprint of Your County" was the theme of a program given before the Adams County Medi-

cal Society, September 8, in Quincy. Participants were Drs. Clarence Bell, Vernon Long, John E. Madden, Robert Sanders and Mr. Leon Pullen, all of Decatur.

MADISON

Society News.—Dr. Louis N. Berard, St. Louis, addressed the Madison County Medical Society in Edwardsville, October 2, on "Cancer of the Urinary Tract." Dr. Charles F. Alderson, East St. Louis, spoke before the society recently on "Lesions of the Colon and Rectum."

McLEAN

Society News.—Dr. Earl Sanborn, staff surgeon, Chicago Municipal Tuberculosis Hospital and Evanston Hospital, discussed "New Concepts in the Treatment of Pulmonary Diseases" before the McLean County Medical Society in Bloomington at the Rogers Hotel, October 14.

MONTGOMERY

Society News.—At a joint meeting of the Montgomery and Macoupin county medical societies at the St. Francis Hospital, Litchfield, Dr. Robert R. Anschuetz, Alton, spoke on "Cancer of the Colon."

RICHLAND

Dr. Telford Fifty Years in Community.—Dr. Alexis T. Telford, who graduated at Missouri Medical College in 1896, has been practicing in Olney since 1902. Prior to his locating in Olney, Dr. Telford had been a physician at Menard Prison. Several years ago, Dr. Telford was one of a select group named by the late C. M. Van Cleve in a series of articles on "Our Good Citizens", published in the Olney Daily Mail. In an article in the same publication, October 9, the following paragraphs from the original story appeared: "There are few men in a community who have the opportunity of making the human contacts that a physician makes in nearly a half century of experience. To all these requirements this quiet, gentle man has measured up 100 per cent. He is a good Methodist and a Past Master of the Olney Masonic Lodge, but has never tried to be prominent in civic affairs.

"But certainly if anyone endeavored to make out a list of "Our Good Citizens," with every implication on the world 'Good', Dr. A. T. Telford would have a Cum Laude just as he has on his medical graduation certificate of (over) half a century ago."

ROCK ISLAND

Society News.—Dr. Warren Nelson, professor of anatomy, University of Iowa College of Medicine, Iowa City, addressed the Rock Island County Medical Society, October 14, at St. Anthony's Hospital.

SANGAMON

Society News.—"Surgical Management of Lesions of the Stomach and the Duodenum" was the subject of Dr. Dean Sauer, St. Louis, before the Sangamon County Medical Society, October 9, in Springfield.

VERMILION

New Medical Director.—Dr. Paul C. Burnett, assistant medical director, W. T. Edwards Tuberculosis Hospital in Tallahassee, Fla., has been appointed medical director of the Vermilion County Tuberculosis Sanatorium, Danville.

Society News.—Dr. Lindon Seed, professor of surgery, University of Illinois College of Medicine, addressed the Vermilion County Medical Society in Danville, October 7, on "Radioisotopes in Medical Diagnosis and Treatment."

WARREN

Dr. Camp President of Rotary Club.—Dr. Harold M. Camp, Monmouth, for twenty-nine years Secretary of the Illinois State Medical Society, is president of the Monmouth Rotary Club, which was organized in 1918. In his activities as Secretary of the State Society, Dr. Camp has traveled about 75,000 miles annually around the country. He averages about 100 trips a year to Chicago alone, which is about 200 miles from the Monmouth office. On these frequent trips to Chicago, Dr. Camp has used the Denver Zephyr on the Burlington Railroad more than 1,700 times.

WINNEBAGO

Society News.—At a meeting of the Winnebago County Medical Society in the LaFayette Hotel, October 14, Dr. J. J. Miller, Chicago, spoke on "New Horizons in Medicine."

GENERAL

State Health Report Available.—The thirty-fourth annual report of the Illinois Department of Public Health, covering the year ended June 30, 1951, has recently been made available. The report reviews expenditures of the department and general health conditions of the state as well as data on the activities of each division of the department of health.

HEALTH DEPARTMENT ACTIVITIES

Review of Hospital Program.—Since 1947, when the Federal-State Hospital Construction program was begun in Illinois, 42 hospital projects have been approved jointly by the State Department of Public Health and the U. S. Public Health Service, it was reported today by the state bureau of hospitals.

Of these projects, 14 hospitals are now in opera-

tion. A nurses home in Cairo has also been completed under the program, as has a public health center in Chicago, which is now rendering community health services.

Completed hospital projects, which provide approximately 930 beds, include Good Samaritan Hospital, Mt. Vernon; Anna City Hospital; Mt. Vernon State Tuberculosis Hospital; Fairfield Memorial Hospital; Lawrence County Memorial Hospital, Lawrenceville; Clay County Hospital, Flora; Mercer County Hospital, Aledo; Carthage Memorial Hospital; St. Clement's Hospital, Red Bud; Wabash General Hospital, Mt. Carmel; Carlinville Area Hospital, Carlinville; a new section of Provident Hospital, Chicago; chronic disease departments of St. Francis Hospital in Peoria and of Illinois Masonic Hospital in Chicago.

In addition to projects which already are completed, 22 hospitals are under construction and four are in various stages of architectural planning.

When all projects approved to date are completed they will provide about 2,371 beds for general patients, 666 for the chronically ill, 147 for neuromental cases and 120 for tuberculosis patients.

Reports compiled by the Bureau of Hospitals of the Illinois Department of Public Health indicate the need for these hospitals, and the increasing use of the facilities which they provide.

During the half year from January 1, 1951 to June 30, 1952 six hospitals reported that the lowest occupancy was 37 per cent of available facilities. In the first half of 1952 the lowest reported occupancy increased to 45 per cent.

A 20-bed medical unit of one hospital reported a 95 per cent occupancy during the first six months of this year and a 58-bed medical-surgical unit in another had 89 per cent occupancy during the same period.

The six hospitals also showed a marked increase in services rendered as indicated by the total number of days of care provided patients. In one hospital the total number of days of care increased about 46 per cent in the comparative periods and in another the increase was approximately 29 per cent.

New Health Officer.—Dr. James H. Wells has been appointed health officer for the Egyptian Tri-County Health Department, which will serve Gallatin, Saline and White counties. He took office August 15. Dr. Wells is from Hopkinsville, Ky., where he was health officer for the Christian County Health Department.

GENERAL

Lectures Arranged Through the Educational Committee of the Illinois State Medical Society:

Paul K. Anthony, Chicago, Millard Avenue Junior Woman's Club, September 17, on Childhood Problems and Child Care.

Margarete M. Kunde, Chicago, St. Helen's Mothers Club, September 22, on Feeding the School Child.

George M. Cummins, Chicago, Matteson Lion's Club in Matteson, October 27, on Medical Problems of Aging.

Fred Hark, Chicago, Young Women's Christian Association, November 3, on Posture and Poise.

Elfriede Horst, Chicago, St. James Mother's Club, in Arlington Heights, November 13, on Discipline for the Growing Child.

Sol Altschul, Chicago, Sherman Park Library, November 11, on Growing Old Gracefully.

Hugh A. Flack, Chicago, Marquette Manor Woman's Club, November 25, How to Live with a Heart Condition.

Lectures Arranged Through the Scientific Service Committee of the Illinois State Medical Society:

Gerald M. Cline, Bloomington, Logan County Medical Society in Lincoln, October 16, on Present Status of Poliomyelitis.

Thomas C. Galloway, Evanston, Knox County Medical Society, October 16, in Galesburg, on Bulbar Poliomyelitis, illustrated.

Harvey White, Chicago, Lee-Whiteside County Medical Societies, October 16, in Dixon, on Congenital Anomalies of the Gastrointestinal Tract in Infants and Children.

Robert M. Jones, Evanston, Rock Island Chapter, Illinois Academy of General Practice, October 28, in Moline, on Medical Management of Thyroid Disturbances.

Charles D. Krause, Chicago, Coles-Cumberland County Medical Societies, October 29, in Mattoon, on Present Status of Caesarean Section.

Harold C. Voris, Chicago, Lee-Whiteside County Medical Societies, November 20, in Rock Falls, on Brain Tumors.

Willard Van Hazel, Chicago, DeKalb County Medical Society, December 16, in Sycamore, on Bronchogenic Carcinoma.

H. Close Hesseltine, Stock Yards Branch, Chicago Medical Society, December 18, on Antibiotics in Complications in Obstetrics and Gynecology.

Your Doctor Speaks over FM Station WFJL.—The following have presented transcribed broadcasts over FM Station WFJL on Thursday evenings at 7:30 under the auspices of the Educational Committee in cooperation with WFJL:

Ralph Spaeth, Chicago, September 26, Juvenile Delinquency.

Carl E. Billings, Chicago, October 16, on Urinary Tract Infections.

DEATHS

GUY L. ARMSTRONG, Taylorville, who graduated at Marion Sims Beaumont Medical College, St. Louis, in 1902, died June 27, aged 73, of coronary occlusion.

WILLIAM HAYDEN BAKER, retired, Quincy, who graduated at Columbia University College of Physicians and Surgeons, New York, in 1896, died September 24,

aged 82. He was a member of the "Fifty Year Club" of the Illinois State Medical Society.

James Edward Bellinger, Collinsville, who graduated at St. Louis University School of Medicine in 1918, died June 17, aged 59, of carcinoma.

John Thomas Boswell, Kewanee, who graduated at Chicago College of Medicine and Surgery in 1916, died July 19, aged 63, of acute coronary occlusion.

Alan G. Brooks, retired, Robinson, who graduated at University of Maryland School of Medicine and College of Physicians and Surgeons in 1906, died September 25, aged 66.

John J. Coady, Minooka, who graduated at the Chicago College of Medicine and Surgery in 1907, died October 10, aged 72.

Don Deal, Springfield, who graduated at Northwestern University Medical School, Chicago, in 1904, died September 13, aged 73.

Maggie Yelton Downs, Danville, who graduated at Keokuk Medical College in 1893, died September 23, age 85.

Fred J. E. Ehrmann, La Grange, who graduated at the College of Physicians and Surgeons of Chicago in 1893, died July 16, aged 79, of cerebral hemorrhage.

Melinda C. K. Germann, Quincy, who graduated at Quincy College of Medicine in 1886, died July 15, aged 88, of myocarditis. She was a member of the "Fifty Year Club" of the Illinois State Medical Society.

Joseph K. P. Hawks, Bloomington, who graduated at Northwestern University Medical School in 1900, died June 15, aged 78, of arteriosclerotic heart disease. He had served as a member of the board of trustees of the Illinois Wesleyan University in Bloomington, and as chief of staff at Brokaw Hospital, in Normal.

Elza Elvis Holloway, Centralia, who graduated at the University of Arkansas School of Medicine, Little Rock, in 1913, died May 15, aged 79, of carcinoma.

James Burnett Hundley, Danville, who graduated at the College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, in 1904, died June 28, aged 72. He was formerly health officer of Danville.

Thomas Augustus Lawler, Taylorville, who graduated at Washington University School of Medicine, St. Louis, in 1906, died June 17, aged 76, of chronic myocarditis and arteriosclerosis.

Garfield B. Moore, Chicago, who graduated at Meharry Medical College, Nashville, in 1917, died July 9, aged 65, of cerebral thrombosis, hypertension, and coronary sclerosis.

Walter H. Nadler, Chicago, who graduated at Northwestern University Medical School in 1913, died September 14, aged 63. He was associate professor of medicine at Northwestern, and was chief of medical service at Passavant Hospital.

Alice Pitkin Nesbit, Chicago, who graduated at Northwestern University Woman's Medical School in 1900, died July 21, aged 76, of coronary thrombosis. She had served on the staff of the Evanston Hospital.

George G. O'Brien, retired, Chicago, who graduated at the University of Colorado School of Medicine, Denver, in 1901, died October 3, aged 77.

Maurice C. O'Hern, Chicago, who graduated at Bennett Medical College, Chicago, in 1914, died July 24, aged 74, of chronic myocarditis and nephritis. He was assistant clinical professor of pediatrics at Stritch School of Medicine of Loyola University.

Arthur J. Richter, retired, Chicago, who graduated at College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, in 1900, died October 3, aged 74.

Hiram Septow, Chicago, who graduated at Universität Basel Medizinische Falultät, Switzerland, in 1920, died July 7, aged 62, of carcinoma of the liver.

Arthur Sprenger, Peoria, who graduated at St. Louis University School of Medicine in 1910, died May 21, aged 63, of coronary occlusion. He was a member of the American Urological Association, and a fellow of the American College of Surgeons.

Leon V. Urbanowski, LaSalle, who graduated at St. Louis University School of Medicine in 1917, died September 18, aged 61.

Frank L. Wakefield, retired, Heyworth, who graduated at Bellevue Hospital Medical College, New York, in 1890, died September 29, aged 85. He had practiced medicine in Heyworth for more than 60 years.

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PHYSICAL MEDICINE ABSTRACTS

EMIL D. W. HAUSER, DEPARTMENT EDITOR

CONSERVATIVE TREATMENT OF DEGENERATIVE ARTHRITIS OF THE KNEE

Oscar O. Selke, Jr., M.D., Houston, Texas. In SOUTHERN MEDICAL JOURNAL, 45:4:358, April 1952.

Degenerative joint changes in the knee should be considered not only with patients of advanced age but with all patients exhibiting knee instability and with all patients complaining of knee pain. Degenerative changes often begin early in adulthood, but seldom are they labeled arthritis. Often these changes are not due to metabolic disorders of the cartilage but are due to repeated injury.

Treatment for degenerative arthritis of the knee evolves into three phases, namely: the reduction of joint inflammation, the lessening of traumatizing joint movement and the strengthening of the hypotonic muscles.

Local application of heat is of specific value in alleviating the pain associated with degenerative arthritis. (A reduction in pain may be assumed to reflect an improvement in the inflammatory state.) Such heat may be efficiently applied by diathermy or by means of a baker.

The patient who does not respond to diathermy usually will find relief in the application of infra-red or luminous heat by means of a baker. Following application of heat, treatment is directed towards the weakened musculature.

All exercise should be of a type that will place no strain or trauma on the knee joints, yet will be of sufficient vigor to increase muscle strength. The following three exercises fulfil these requirements: quadriceps setting, hamstring exercise and gastrocnemius exercise.

It should be emphasized that good results cannot be obtained unless maximum muscle tension is created during each exercise movement, and that the exercise should be repeated until the muscle is fatigued. Although these exercises are very simple, they will increase muscle tone, strength, and coordination, with minimal joint trauma, if the patient will put determination into each movement.

Treatment of degenerative arthritis of the knee is not complicated but requires attention to detail. Treatment is not complete unless the patient is coached in daily living habits which affect the knee, including diet, movement patterns, posture, and degree of activity. Every patient deserves treatment to improve his present state and to minimize progression of the disease.

PROBABLE CAUSE OF LOW BACK PAIN AMONG BUS DRIVERS

A. H. Woolfson, M.C.S.P. In PHYSIOTHERAPY, 38:6:101, June 1952.

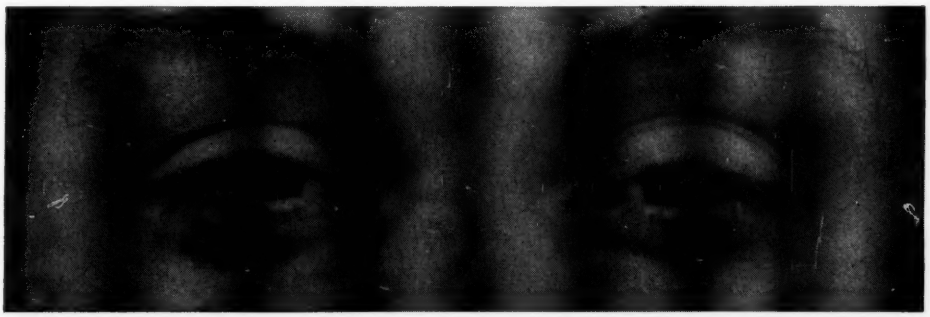
During the course of the physical therapy treatment of a number of bus drivers suffering from low back pain, Woolfson observed that many

(*Continued on page* 46)

in colds and grippe

for codeine's analgesia—

without that dopey feeling



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of the patients complained of similar symptoms. Onset of the disease in most of the patients also was very similar: feeling of tiredness with an ache down the lower part of the back with marked stiffness of the lumbar spine, with an acute pain on bending forward, which in most cases incapacitated them from work.

These symptoms sooner or later brought them to the Orthopedic Department where diagnosis and treatment was established. Most of these patients were referred for rehabilitation, and the treatment consisted of manipulation, massage and a course of remedial exercises covering a period of from four to five weeks, after which 75 per cent of the patients improved and were able to resume their work. However, a good number of these patients returned with recurrent symptoms for further treatment within a period of six to nine months, with the same story. It was then that Woolfson decided to investigate the cause.

Woolfson questioned the drivers and even took trips with them to make his own observations. Then he made the following recommendations to correct the posture of the bus drivers in their work:

(1) The driver should be taught the importance of relaxation at the wheel.

(2) The driving seat should be re-designed to give full back rest.

(3) It is important that a small driver should not be made to drive a large bus; neither should a large heavily built man be asked to drive a small bus.

(4) Drivers should take courses of remedial exercises.

(5) The loads carried by the buses should be reduced.

(6) There should be enforced periods of rest for the drivers between journeys.

THE USE OF CORTISONE IN THE MANAGEMENT OF THE SHOULDER-HAND SYNDROME: A CASE REPORT

Nathan Sussman, M.D., Harrisburg, Pa. In ARCHIVES OF PHYSICAL MEDICINE, 33:5:289, May 1952.

Up to the present time the shoulder-hand syndrome has been treated primarily with various physical therapy modalities, resulting in some temporary relief with little or no alteration in the course of the pathological physiology. Roentgen therapy also proved inadequate, while interruption of the sympathetic nerve pathways has been reported as giving good results. Recently several have noted the use of a local block, by infiltrating the stellate ganglion with procaine hydrochloride, as a successful therapeutic approach. It is their belief that this procedure interrupts the cyclical phenomenon set up through the internuncial pool of active stimuli in the cord by the primary etiological condition; they found that the majority of cases obtained relief of pain, muscle spasm, and disability.

This paper presents a case that has been refractory to physical therapy, nerve block, roentgen therapy, and stellate ganglion block, but exhibited striking improvement with cortisone.

Although the mechanism by which cortisone acts still is open to conjecture, its therapeutic effectiveness has been demonstrated in an ever-increasing spectrum of disease entities. Thus, as is illustrated by the case reported in this paper, this steroid is recommended in the management of the shoulder-hand syndrome for the following reasons: (1) Its analgesic effect. (2) Resultant increased sense of well-being. (3) Increased amenability to adjunctive physical therapy. (4) Progressive reversal of the existing pathological state.

ACTH AND CORTISONE IN RHEUMATOID ARTHRITIS: A FOLLOW-UP STUDY OF THE CLINICAL EFFECT IN THIRTY-FOUR CASES

Finn Fischer, M.D., Kansas City, and C. Stewart Gillmor, M.D., Kansas City. n JOURNAL OF THE MISSOURI STATE MEDICAL ASSOCIATION, 49:2:123, February 1952.

Thirty-four patients with rheumatoid arthritis, mainly of a severe refractory type, were treated with short courses of ACTH, cortisone or both. Most of the patients had previously tried several other forms of treatment consisting of physical therapy, removal of suspected foci of infection (tonsils and teeth), synovectomy, fever and vaccine therapy, sulfa and penicillin, vitamins (high dosage vitamin D), hormones (including desoxy-corticosterone with vitamin C and pregnenolone) and several other even less rational measures.

During the study of these patients, physical therapy was given as indicated. All the patients

(*Continued on page* 48)

Meat...

and its Wide Clinical Applicability

That meat is an important component of the high protein diet[1] employed in the treatment of many pathologic states is evident from the following dietary suggestions that have been recommended by some authorities in the field of nutrition:

Protein of good quality and in adequate amounts is the most effective dietary agent for protecting the liver from damage and for promoting its repair.[2] In the long-term management of chronic liver disease, a suggested diet includes at least 4 ounces of lean lamb, veal, or beef in both the noon and evening meals.[3]

Among the nutritional needs of patients with chronic ulcerative colitis is protein.[4] For such patients a recommended diet includes 4 ounces of tender meat with luncheon and with dinner.[5a]

In diabetes mellitus, maintenance of protein reserves is important for supporting well-being and vigor, for maintaining resistance to infection, and, in conjunction with good general management, for minimizing many of the degenerative changes commonly seen in this condition.[6,7] One ounce of bacon at breakfast and 2½ ounces of cooked meat at each of the other two meals are valuable in a diabetic diet.[5b]

A program of treatment[8] found useful in atherosclerosis of the coronary vessels includes an adequate diet low in fat (20-25 Gm. daily) and normal or moderately high in protein (60-100 Gm. daily), in conjunction with lipotropic agents. A sample menu of this diet lists 2 ounces of lean meat at both the noon and evening meals.

Underweight or average weight patients with persistent low blood sugar levels are benefited by a high protein diet providing meat two or three times a day.[9] In overweight patients of this type, lean meat is served at luncheon and at dinner.

During convalescence from infectious disease, the importance of "high protein-high calorie" diets including generous servings of meat deserves emphasis.[10] For this purpose, a suggested typical daily menu schedule which results in weight gain, improved vigor, and a restored sense of well-being furnishes ½ ounce of bacon at breakfast and 3 ounces of meat at each of the other meals. Supplementary feedings may include additional amounts of meat.

1. Lewis, H. B.: Proteins in Nutrition, in Handbook of Nutrition, American Medical Association, ed. 2, Philadelphia, The Blakiston Company, 1951, p. 1.
2. Patek, A. J., Jr.: Evaluation of Dietary Factors in Treatment of Laennec's Cirrhosis of Liver, J. Mt. Sinai Hosp. *14*:1 (May-June) 1947.
3. Portis, S. A., and Weinberg, S.: Recent Advances in the Medical Treatment of Cirrhosis of the Liver, J.A.M.A. *149*:1265 (Aug. 2) 1952.
4. Welch, C. S.; Adams, M., and Wakefield, E. G.: Metabolic Studies on Chronic Ulcerative Colitis, J. Clin. Investigation *16*:161 (Jan.) 1937.
5. (a) Mayo Clinic Diet Manual, Philadelphia, W. B. Saunders Company, 1949, p. 89.
   (b) Ibid., p. 133.
6. Mosenthal, H. O.: Management of Diabetes Mellitus, An Analysis of Present-Day Methods of Treatment, Ann. Int. Med. *29*:79 (July) 1948.
7. McLester, J. S.: Nutrition and Diet in Health and Disease, ed. 5, Philadelphia, W. B. Saunders Company, 1949, p. 364.
8. Morrison, L. M.: Arteriosclerosis: Recent Advances in the Dietary and Medical Treatment, J.A.M.A. *145*:1232 (Apr. 21) 1951.
9. Low Blood Sugar Level; Queries and Minor Notes, J.A.M.A. *149*:1358 (Aug. 2) 1952.
10. Goodman, J. I., and Garvin, R. O.: Results of High Calorie Feeding, Gastroenterology *6*:537 (June) 1946.

The Seal of Acceptance denotes that the nutritional statements made in this advertisement are acceptable to the Council on Foods and Nutrition of the American Medical Association.

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Main Office, Chicago... Members Throughout the United States

were hospitalized during the initial course of hormonal therapy. Joint measurements were done before and after each course of treatment and subjective or objective changes noted daily.

The indications for the use of ACTH and cortisone in rheumatoid arthritis as they appear following this study are as follows:

A. Short Courses:
   1. During acute exacerbations, especially when everything else fails.
   2. Prior to and during vigorous physical therapy in an attempt to restore joint function in cases that have not previously had sufficient treatment.
   3. Prior to and after plastic joint surgery.

B. Continuous Therapy.
   Only in selected cases in which benefit is obtained from daily doses of cortisone not exceeding 75 mg.

SOME EFFECTS OF CEREBRAL DIATHERMY ON NORMAL ADULTS

Emery K. Stoner, M.D., M.Sc. (Phys. Med.), and Herbert Shapiro, Ph.D., Philadelphia. In ARCHIVES OF PHYSICAL MEDICINE, 33:5:272, May 1952.

The effects of cerebral diathermy have been studied from various aspects including: changes in cerebro-spinal fluid, and in the chemistry of blood; abolition of diuresis in the dog due to aminophylline, or in man due to water ingestion; and alterations in spinal temperature, and endocrine secretions. Cerebral diathermy has been used clinically for the treatment of essential hypertension, pituitary dysfunctions, headaches, dizziness and numerous other symptoms. At the present time, it is used empirically in the treatment of hemiplegia due to cerebral thrombosis, where it is believed that the heating will increase local blood supply, presumably by relaxing the vessels which are in spasm surrounding the area of thrombosis.

Little can be found in the literature concerning the physiologic effects of cerebral diathermy, especially in normal persons. Therefore, this study on normals was undertaken as an exploratory investigation in that direction.

It was found that mild cerebral diathermy in normal adults produced no marked change in blood pressure, pulse or respiration. Cerebral diathermy, like diathermy elsewhere on the body, can cause peripheral vasodilatation if the environmental temperature is not too cold for a given individual, and if the quantity of heat developed is sufficient.

Cerebral diathermy was found to produce drowsiness and reduction in the ability to concentrate, both objectively and subjectively. Following cerebral diathermy there was mental alertness, but physically a feeling of tiredness and weakness of the lower extremities which was transient in nature.

ANTERIOR POLIOMYELITIS: PHYSICAL TREATMENT IN SOUTHERN CALIFORNIA

O. Leonard Huddleston, M.D., Ph.D., Elizabeth Austin, M.D., Richard W. Moore, M.D., Rene Cailliet, M.D., and David Rubin, M.D., Ph.D. In THE BRITISH JOURNAL OF PHYSICAL MEDICINE, 15:4:75, April 1952.

This is a resume of the physical treatment of patients with anterior poliomyelitis which has evolved in Southern California during the past six years. Procedures have been selected and incorporated into a fairly well standardized treatment regimen; some of the methods and technics have been original, whereas many have been adopted from other sources and places.

When a diagnosis of anterior poliomyelitis is established, the objectives in any program of rehabilitation are as follows: (1) to save life; (2) to allay the acute neuromuscular phenomena of muscle shortening, hyper-irritability, stretch-pain and muscle tenderness (the muscle-spasm syndrome); (3) to prevent or minimize musculoskeletal deformities by proper positioning and supervised motion; (4) to establish patterns of functional motion by means of neuromuscular reeducation, so that the patient will be able to make the most effective use of residual power.

Hot moist packs (hot fomentations) are still one of the most effective methods for relieving muscle shortening, pain and tenderness. When not contra-indicated, they enhance the patient's comfort and proper body alignment, as well as neuromuscular reeducation, prevention of contractures and deformities. They are not ordered for muscle weakness *per se* during the acute stage stage of the disease, but for tenderness, stretch-pain, and muscle shortening. Curare and other drugs also are used to relieve the acute neuro-

(*Continued on page* 50)

massage . . .

"an indispensable agency in control of significant features of many disease processes."[1]

As "the renaissance in physical therapy promises that this oldest of healing arts will again come into its own,"[2] physicians, nurses and physical therapists have become increasingly aware that the lubricant chosen may be a factor in the success of massage therapy.

1 and 2 — "Massage — Physiologic Basis," Arch. Phys. Medicine, March 1945. Presented as part of Instruction Course, Twenty-third Annual Session, Amer. Congress of Phys. Medicine, Cleveland, 1944.

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Physical Medicine (Continued)

muscular symptoms of poliomyelitis without the use of moist heat.

The activities of the patient are carefully regulated during the acute stage, for there is a great deal of evidence that the degree of paralysis is influenced by activity at this time. Positioning is of primary importance in preventing contractures, and for the acutely ill patient it may be the only form of physical therapy used.

When the acute symptoms of fever, headache, nausea and so on have disappeared — usually within two weeks after onset — active intensive treatment of muscle spasm and weakness may be begun. A more comprehensive evaluation of the patient is then made in order to outline an appropriate patient-participating program of physical treatment.

A vigorous activity program, consistent with the physical tolerance of the patient, is the basic principle used in the physical rehabilitation of anterior poliomyelitis patients. The resistive exercises employed in neuromuscular reeducation and therapeutic exercise consist in two types: manual resistive and mechanical resistive. The mechanical resistive exercises are performed in the gymnasium under the guidance and assistance of *corrective therapists,* and are designed to complement those employed by the physical therapist who administers the manual exercises. Complemental heavy-resistive exercises involve the use of pulley-weights and other gymnasium equipment.

At the end of one or two months check-up examinations are made and some patients are transferred to an out-patient status. Such patients are prescribed a limited out-patient program, which usually consists in neuromuscular reeducation and mat exercises. In some instances patients receive pool therapy, occupational therapy or speech therapy, and a combination of these may constitute the major portion of the treatment program. As recovery continues the treatment is progressively reduced, and the patients are either transferred to a home-treatment program or discharged with instructions for semi-annual or annual check-up examinations.

(*Continued on page 52*)

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Laboratory Fees in Hospital	5.00	10.00	15.00	20.00
Operating Room in Hospital	10.00	20.00	30.00	40.00
Anesthetic in Hospital	10.00	20.00	30.00	40.00
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Physical Medicine (Continued)

ORTHOPEDIC TREATMENT OF ACUTE AND SUBACUTE POLIOMYELITIS WITH CURARE AND STRETCHING

Victor Raisman, M.D., F.R.C.S., Kew Gardens, New York. In NEW YORK STATE JOURNAL OF MEDICINE, 52:9:1147, May 1, 1952.

The orthopedic treatment of acute and subacute poliomyelitis has always had the same goals, namely, to prevent deformities and to work for the restoration of power in apparently paralyzed muscles. Owing to the fact that it is not possible to distinguish between muscles whose motor nerve cells are completely destroyed and those whose cells are merely inhibited or partially destroyed, a great deal of effort must be exerted to help all the muscles in the early phases in the hope that none will remain completely paralyzed.

The treatment being discussed here is based on a different concept for which Elizabeth Kenny deserves major historical credit. She demonstrated that the overpulling opponent of the paralyzed muscle was not normal but was itself affected and in a state of spasm or tightness. Her theories and treatment aroused violent controversy and stimulated research, which confirmed, on an electromyographic basis, the presence of increased irritability or spasm in the acute phase in most of the muscles of the body. It also demonstrated however, that the hot packs which she advocated did not lessen the spasm. On this basis, Ransohoff in Long Branch, New Jersey, in 1945, and, simultaneously, Paul of Iowa City, Iowa, began using curare to lessen the irritability and permit the restoration of muscles to their normal length by stretching. Their treatment, therefore, is based on the necessity of overcoming the muscle spasm or shortening, as rapidly as possible, by stretching the contracting muscles, and also on the value of early exercise including ambulation, if possible.

The injection of curare is given intramuscularly every eight hours, in the morning after breakfast, in the late afternoon after supper, and about midnight. Approximately three-quarters of an hour after the two daytime injections, the patient is visited by a physical therapist who stretches all the joints of the body through an ever-increasing range. At the same time the patient is urged to exercise in any way he can and

(Continued on page 54)

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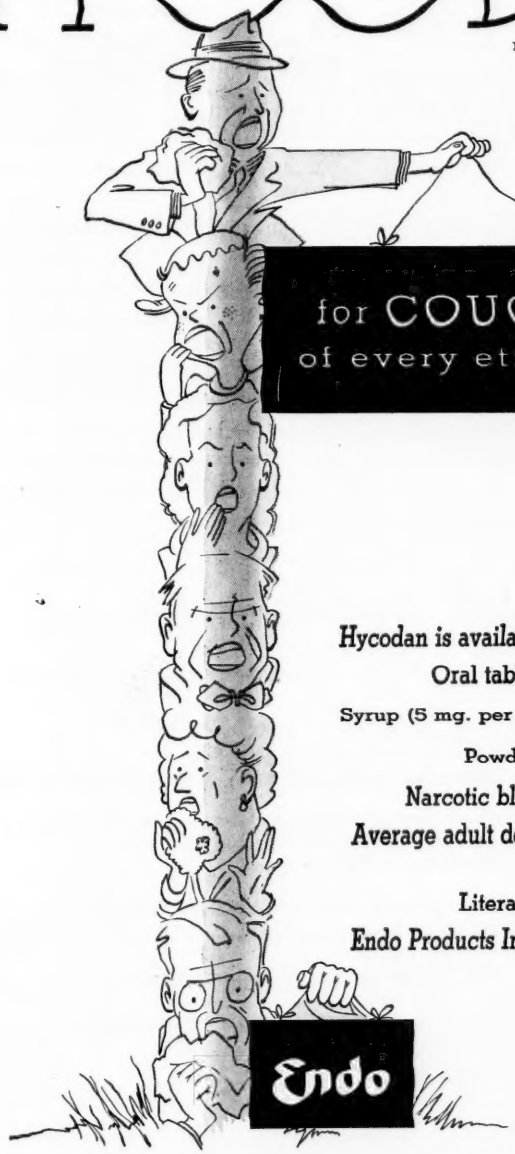

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Physical Medicine (Continued)

is gotten up to walk if at all possible, even if two people are needed merely to hold him upright.

When the orthopedic examination reveals complete relaxation, the curare is stopped, but the stretchings are continued. If several days later the relaxation has been maintained, the patient is discharged from the hospital. The length of the hospital stay is dependent on the length of the interval between the onset and the beginning of treatment, as well as on the extent of involvement.

Following the patient's discharge from the hospital, the stretchings are continued daily by the physical therapists, aided by members of the family. As long as there are any demonstrable weaknesses, the stretching must be continued with the same degree of vigilance as well as vigor. As recovery takes place, however, the stretching may become little more than a routine habit which the patient should consider in the same light as brushing the teeth twice daily.

Besides the stretchings, progressive resistance exercises, sinusoidal stimulation, and muscle re-education are all utilized to aid the patient to recover normal muscle power.

With this treatment it is unnecessary to protect the patient from the development of deformities by applying braces or plaster casts. In fact, as long as the patient cooperates by continuing the stretchings, no deformities do develop. Furthermore, the circulatory changes frequently seen in the lower extremities of polio patients do not develop, and only minimal inequalities in leg length have been observed.

PATHOGENETIC CONCEPTS OF "FIBROSITIS": FIBROPATHIC SYNDROMES

Irvin Neufeld, M.D., New York, N. Y. In ARCHIVES OF PHYSICAL MEDICINE, 33:6:363, June 1952.

"Fibrositis" certainly is not only a confused but also a confusing term. Therefore, it is preferable to use the term "fibropathic syndromes" to indicate the different non-arthritic rheumatic symptom-complexes of different etiology, pathology, pathogenesis, and clinical course.

This brief summary of the more thoroughly elaborated pathogenetic concepts of fibropathic syndromes is intended to (1) demonstrate that there is already adequate workable knowledge of the bio-chemical, bio-physical, neuro-pysiological, and bio-electrical aspects of the fibropathic syn-

(*Continued on page* 56)

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Potent cough sedative - dose, 1/128 grain to 1/64 grain.

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WHEN DIETARY SUPPLEMENTATION IS NEEDED...

what more could a supplement provide?

If the concept of an ideal dietary supplement could be formulated, it might well be one that provides qualitatively every substance of moment in human nutrition. It would provide those for which human daily needs are established as well as others which are considered of value, though their roles and quantitative requirements remain unknown.

How Ovaltine in milk approaches this concept, and how well the recommended three glassfuls daily augment the nutritional intake, is shown in the appended table. The two forms of Ovaltine available—plain and chocolate flavored—are closely alike in their nutrient values.

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Three Servings of Ovaltine in Milk Recommended for Daily Use Provide the Following Amounts of Nutrients

(Each serving made of ½ oz. of Ovaltine and 8 fl. oz. of whole milk)

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*CALCIUM	1.12 Gm.	*ASCORBIC ACID	37 mg.
CHLORINE	900 mg.	BIOTIN	0.03 mg.
COBALT	0.006 mg.	CHOLINE	200 mg.
*COPPER	0.7 mg.	FOLIC ACID	0.05 mg.
FLUORINE	3.0 mg.	*NIACIN	6.7 mg.
*IODINE	0.7 mg.	PANTOTHENIC ACID	3.0 mg.
*IRON	12 mg.	PYRIDOXINE	0.6 mg.
MAGNESIUM	120 mg.	*RIBOFLAVIN	2.0 mg.
MANGANESE	0.4 mg.	*THIAMINE	1.2 mg.
*PHOSPHORUS	940 mg.	*VITAMIN A	3200 I.U.
POTASSIUM	1300 mg.	VITAMIN B_{12}	0.005 mg.
SODIUM	560 mg.	*VITAMIN D	420 I.U
ZINC	2.6 mg.		

*PROTEIN (biologically complete)	32 Gm.
*CARBOHYDRATE	65 Gm.
*FAT	30 Gm.

*Nutrients for which daily dietary allowances are recommended by the National Research Council.

dromes available to show that attempts at solving the problem from a histo-pathological aspect are a priori doomed to failure; and (2) to stimulate more research in these lines in order to achieve a scientifically acceptable comprehension of this obscure but important ailment.

The four chief symptoms of "fibrositis" ("tetralogy of fibropathic syndromes"), namely: pain, tenderness, post-inertial dyskinesia (usually but improperly called "jelling" or "stiffness"), and easy muscular fatiguability, may more satisfactorily be approached if one is familiar with the main principles of the patho-mechanism of these mainly functional syndromes. Certain peculiar features, such as non-arthritic joint pain (arthralgia), non-segmental reflectory phenomena (often labelled as "hysterical"), weather-sensitivity, responses to physical and other therapeutic procedures, psychogenic rheumatism, psychogenic diagnosis, rheumatogenic psyche, stress-conditioned rheumatic symptoms, post-traumatic and traumatogenic fibropathic conditions are discussed briefly on the basis of presently available scientific data.

A strong plea for further research along the mentioned lines, and against rejection of patient's justified but not fully understood complaints, and against unsound application of sound psychomatic principles have been stressed in this article.

INEFFECTIVENESS OF ULTRAVIOLET HEMO-IRRADIATION IN DISTEMPER

Khalil G. Wakim, M.D., Frank H. Krusen, M.D., Carl F. Schlotthauer, D.V.M., and Fordyce R. Heilman, M.D., Rochester, Minn. In ARCHIVES OF PHYSICAL MEDICINE, 33:6:339, June 1952.

The literature on ultraviolet irradiation of blood suggests the effectiveness of such therapy in the treatment not only of bacterial but also of virus infections. There is sufficient evidence in the literature, since the work of Carre, to show that distemper in dogs is caused by a filterable virus.

This study was undertaken to determine whether the procedure of hemo-irradiation really

(*Continued on page* 58)

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Physical Medicine (Continued)

has a place in therapy. Three important factors were kept strictly constant in this study: (1) the amount of blood withdrawn and irradiated; (2) the time of exposure to ultraviolet energy; (3) the intensity of ultraviolet radiation.

Thirty dogs stricken with distemper were used in this study; 15 were kept as controls and 15 were irradiated. They were kept in the kennels under identical conditions and given the same food and care. From past experience it has been found that either recovery or death of the animal stricken with distemper occurs usually within fifteen days from the start of illness.

At the end of the fifteen days, 11 of the 15 control dogs remained alive, while of the 15 dogs which were given ultraviolet irradiation of blood, only 8 were still alive on the fifteenth day after treatment.

From the data obtained, it can be stated that ultraviolet irradiation of the blood according to the standard procedure is ineffective in the therapy of distemper.

SOME PROBLEMS OF BRONCHIAL ASTHMA
E. Herxheimer, M.D. In THE BRITISH JOURNAL OF PHYSICAL MEDICINE, 15:6:129, June 1952.

Herxheimer questions whether breathing exercises, ordered so generally and carried out for a long time, have improved the results in the treatment of asthma. As is well known, many methods of treatment relieve the disorder in a high percentage of cases; the common explanation of this fact is that psychological factors support their effect. It may be taken for granted that certain psychological factors will accompany breathing exercises, as they do other methods, and perhaps even more so; the patient is actively doing something to treat his disease, and the confidence of his physician, of the physical therapist and of himself are strong factors of great value.

Leaving this part of their action aside, it should be determined whether or not breathing exercises can facilitate the passage of air into and out of the lungs in spite of given obstacles. The air is transported by the movement of the respiratory and diaphragmatic muscles, the elasticity of the lungs and the weight of the thorax. The muscles may be subject to the influence of exercise, but the question is: can

(*Continued on page* 60)

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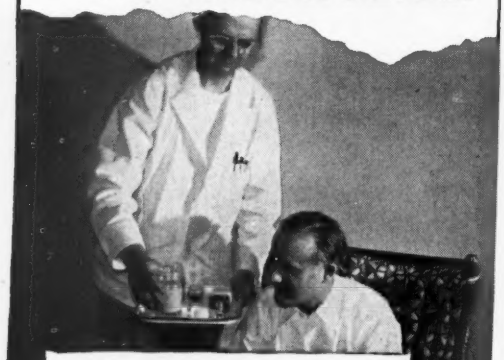

In selected cases, the gradual withdrawal technic may be necessary. Reactions are minimized by gradual curtailment. Treatment as a whole is positive; neither avulsive nor restraintive methods are employed.

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Physical Medicine (Continued)

they be trained to overcome obstruction and, if so, in what circumstances?

In the experience of Hexheimer, patients with mild or moderate attacks of asthma and long free intervals have a large vital capacity, often larger than the expected value. Naturally, such patients exert themselves greatly during their attacks and practice inspiration and expiration with maximal effort. It is unlikely that the efficiency of their respiratory muscles could be improved still further by breathing exercises. It may be possible to teach such patients not to be frightened by their attacks, and to use their abdominal muscles in a determined effort to prevent over-inflation, but it is doubtful that such an attempt would be of value in an acute and violent attack.

In chronic asthma the position may be different. Here we see patients with mild bronchial obstruction, whose chests seem to be more inflated than is warranted by the degree of obstruction. If these patients are treated with drugs which relieve obstruction, the inflation seldom recedes at once. The vital capacity improves only by a few hundred millilitres after each treatment, and it takes several days or more to reach a normal state of ventilation. Wyss and Schmid (1951) have measured the bronchial resistance in asthmatic cases and found that in some cases it was much smaller than was expected. They conclude that in these cases the breathing difficulty must have been caused by an "increased tonus" of the respiratory muscles and the diaphram. It may be assumed that in such cases breathing exercises can be of great value, if they lead to a general relaxation of the musculature and thus to a deflation of the thorax.

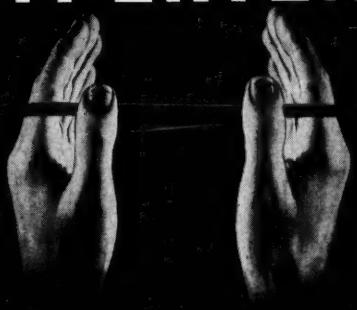
NEW DEVELOPMENTS IN AMPUTEE REHABILITATION

Atha Thomas, M.D., Denver, Colo. In ARCHIVES OF PHYSICAL MEDICINE, 33:6:357, June 1952.

Ironical though it is, most advances in amputation surgery and in the development of prosthetic devices in modern times have taken place during and immediately following a major war. It has been only in the recent years that the importance of training the amputee in the use of his prosthesis has been appreciated. With the lower extremity amputation, not only are active

(*Continued on page* 64)

For HYPERTENSION



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1. Parsonnet, A. E., et al.: J. M. Soc. New Jersey 47: 504, 1950.

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Physical Medicine (Continued)

exercises necessary but careful instruction and persistent practice in proper gait and posture are essential. With the upper extremity prosthesis, the amputee requires thorough instruction, long practice and perseverance if he is to master its use.

Some of the more important devices which have been developed and made available to the limb industry are the suction socket above-knee prosthesis, better artificial arms, and new terminal devices. The latter are so-called because they attach to the end of the prosthesis and substitute for the hand. The Army Prosthetic Research Laboratory has developed a new hook and a new hand, which appear to have certain definite advantages over the conventional devices now in common use.

One of the most significant developments that has taken place in recent years is the commendable change in attitude and philosophy evidenced by members of the artificial limb industry. They have developed a truly professional attitude toward their work and in their relationship with the physician and the amputee, with more emphasis placed on rendering a service rather than selling a product.

A TREATMENT OF CEREBRAL PALSY: BASED ON THE ANALYSIS OF THE PATIENT'S MOTOR BEHAVIOR

Karel Bobath, M.D., and Berta Bobath, M.S.C.P. In THE BRITISH JOURNAL OF PHYSICAL MEDICINE, 15:5:107, May 1952.

This paper describes the motor disorders of patients suffering from cerebral palsy. It shows that their postures and movements consist basically of typical reflex patterns, which are modified in a characteristic manner by the patient's efforts to move in spite of the handicap. An account is given of the use made by contemporary methods of treatment of these reflex patterns, and the value and the limitations of such forms of treatment are discussed. The paper concludes with the outline of a treatment which is based on the teaching of inhibitory control, leading to a breaking up of these reflex patterns.

Tuberculosis is a communicable disease that can be prevented. The practicing physician, by active participation, stands in the front ranks in the ultimate conquest and total eradication of this disease. Edward A. Piszczek, M.D., The Illinois Med. J., March, 1952.

BOOKS RECEIVED

The following books have been received for reviewing, and are herewith acknowledged. This listing should be considered as a sufficient return for the courtesy of the sender. Books that appear to be of unusual interest will be reviewed as space permits each month. Readers desiring additional information relative to books listed, may write the Editor who will gladly furnish same promptly.

FINALITY AND FORM. By Warren S. McCulloch, M.D., Professor of Psychiatry and Physiology, Neurophysiologist, Department of Psychiatry, University of Illinois, College of Medicine, Illinois Neuropsychiatric Institute, Chicago, Illinois. Charles C. Thomas, Publisher, Springfield, Illinois. $3.75.

PARDON MY SNEEZE. By Milton Millman, M.D., Fellow American Academy of Allergists, Member American Academy of Allergy. Frye & Smith Ltd., San Diego, California.

SYNOPSIS OF PATHOLOGY. By W. A. D. Anderson, M.A., M.D., F.A.C.P., Professor of Pathology, Marquette University School of Medicine; Pathologist, St. Joseph's Hospital, Milwaukee, Wisconsin. 334 text illustrations and 13 color plates. Third Edition. The C. V. Mosby Company, St. Louis. $8.00.

NUTRITION IN THE PRACTICE OF MEDICINE, with comments on nutrition, disease and geography. Nutrition Symposium Series, Number 4. Proceedings of the Nutrition Symposium held at the University of California, School of Medicine, San Francisco, October 30, 1951. J. Arnold Bargen, Paul R. Cannon, John B. Condliffe, Perry J. Culver, Robert M. Kark, Heinrich Necheles and Fredrick J. Stare. July 1952. The National Vitamin Foundation, Incorporated, 150 Broadway, New York 38, New York. $1.50.

RESEARCH IN ENDOCRINOLOGY. By August A. Werner, M.D. and Associates. Edited by Al R. Schmidt, City Editor, Belleville Daily Advocate, Belleville, Illinois.

DYNAMIC PSYCHIATRY, Frustrated Women. Volume Three. By Louis S. London, M.D., Borinthian Publications, Inc., New York 16, N. Y. $3.00.

A 40 YEAR CAMPAIGN AGAINST TUBERCULOSIS. By Louis I. Dublin, Ph.D., Second Vice-President and Statistician. Metropolitan Life Insurance Company, Home Office, New York.

KITCHEN STRATEGY — the Family Angle on Nutrition. By Leona M. Bayer, M.D., Assistant Clinical Professor of Medicine, Stanford University School of Medicine, San Francisco, California, and Edith Green, Television Cooking Expert, San Francisco, California. Charles C. Thomas, Publisher. Springfield, Illinois. $3.75.

NEUROSURGERY IN GENERAL PRACTICE. By Adrien Ver Brugghen, M.B., Ch.M., M.S., F.A.C.S., Clinical Professor of Neurological Surgery (Rush) University of Illinois College of Medicine, Neurosurgeon to the Presbyterian Hospital of Chicago. Charles C. Thomas, Publisher, Springfield, Illinois. $14.00.

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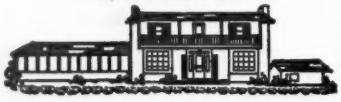

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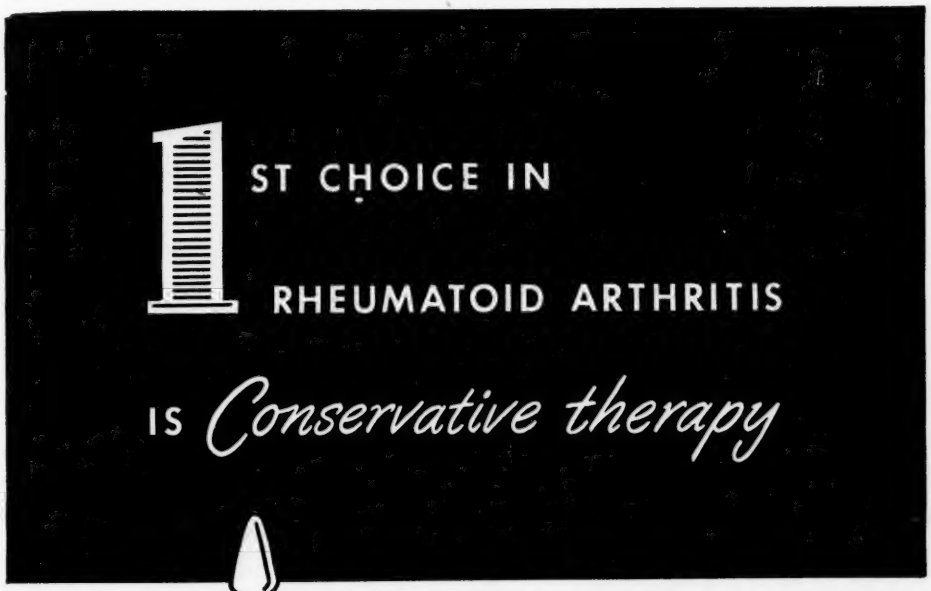
UTERINE BLEEDING

Abnormal uterine bleeding is a symptom rather than a distinct pathological entity and therefore should not be treated by any method until the cause for the abnormal bleeding has been determined. Irradiation therapy either in the form of external irradiation or radium therapy, is effective in an extremely high percentage of instances where this syndrome exists. In spite of many favorable published reports by both gynecologists and radiologists, there is still a general reticence on the part of surgeons and internists to utilize this form of therapy in menopausal patients. As a result of this, many women in the menopausal age group suffer through many long weeks, months and years with fruitless hormonal administration and other palliative measures and no relief from the abnormal uterine bleeding when the process could be stopped so easily and so effectively by irradiation.

Before accepting a patient for the administration of radiation therapy to the ovaries, it is essential to have complete medical and gynecological examination including histological study of the endometrium. Detail study of the endometrium by a competent pathologist is essential not only to rule out malignancy but also to learn whether or not a preponderance of secretory or estrogen type of activity is present.—*Dr. J. Marshall Neely, The Value of Irradiation Therapy in the Management of Abnormal Uterine Bleeding, Nebraska M. J., June* 1952.

Isonicotinic acid hydrazide, the most recent development in the therapeutics of tuberculosis, if it proves to have a comparable effect in humans as has been demonstrated in animals—will have its important place in the treatment of tuberculosis, but also its limitations. It was two or more years after streptomycin began to play an important role before resection of diseased pulmonary tissue began to have its effect in the treatment of tuberculosis. It is more than likely that isonicotinic acid hydrazide will have an effect in the treatment of tuberculosis that may be even greater than that of streptomycin, but up to this point clinical evidence is not availale to substantiate assumptions based on animal experimentation. Basically the success of treatment now depends upon bed rest, good nursing care, graduated exercise, combined with a judicious selection of appropriate therapeutic measures, both surgical and medical, under close medical supervision in tuberculosis hospitals. Paul S. Phelps, M.D., and Reginald C. Edson, M.D., Conn. State Med. J., May, 1952.



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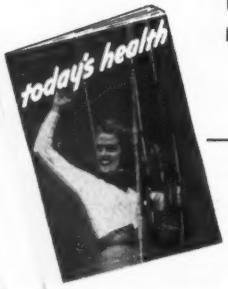

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THE SHOULDER AND THE HEART

There have been increasing reports in recent years concerning painful dystrophies and other disabilities of the shoulder or hand, or both, occurring in patients who have suffered acute myocardial infarction, or who have had recurrent angina pectoris. Such complications of coronary disease are not a recent discovery. They were mentioned in a monograph by Sir William Osler in 1897, and in 1927 Libman had a theory concerning their etiology which he elaborated upon further in later years.

We feel that the association of such painful shoulders with coronary artery disease is not only a definite entity but too frequent to be coincidental.

The condition is probably much more common than generally recognized and is masked by such diagnoses as bursitis, fibrositis, and arthritis.

Clinically, the condition begins as pain in the shoulder and upper arm, which may appear immediately or many weeks after acute myocardial infarction, or may appear as an annoying side issue of intractable angina pectoris. The patient readily differentiates the coronary pain from the shoulder or arm pain. Later the patient complains of weakness and limitation of motion of the shoulder. Such symptoms become persistent and are often followed by swelling of the forearm and hand. If the hand becomes involved, the changes seem indistinguishable from the various stages of Dupuytren's contractures, with swelling, pain, and stiffness followed by thickening, nodulation, and contractures of the palmar fascia. The final stage, which fortunately is infrequent, is the development of a full-blown claw-hand.—*Dr. Joseph B. Cady, Shoulder Disabilities Associated with Coronary Disease, Pennsylvania M.J., June* 1952

Tuberculosis of the lungs may be present without causing any symptoms. The disease may pass through a complete cycle of activity, even to healing, without the patient's actual knowledge of such. The symptoms may manifest themselves insidiously or appear abruptly as an acute pneumonia. Tuberculosis may manifest itself first in some other organ without any clinical indication of lung involvement. Tuberculosis of the lungs may assume so many different clinical forms that it must be considered in the differential diagnosis of practically every lung disease. James M. Blake, M.D., N.Y.S. J. of Med., February 1, 1952.

WHEN RELIEF OF HYPERTENSIVE SYMPTOMS

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CIVILIAN CASUALTIES

Nearly two million casualties, the worst automobile accident toll in the nation's history, were recorded in 1951, according to figures recently released by The Travelers Insurance Companies.

Last year's traffic deaths totaled 37,100, an increase of 1600 over the 1950 mark. The injury count soared to 1,962,600, more than 160,000 over 1950, the Hartford firm reported.

The death and injury totals are highlight statistics from "Lucky You," eighteenth in the annual series of traffic accident data booklets published by The Travelers. The company collects and analyzes accident statistics from each state.

More than 13,000 persons were killed and 570,000 injured last year by drivers who were exceeding the speed limit, according to the report. Excessive speed was "far and away the most dangerous mistake in driving" in 1951.

More than 11,000 drivers under twenty-five years old were involved in fatal accidents and 416,000 more in personal injury accidents, the figures reveal.

Pedestrian experience in 1951 is termed "an island of encouragement in last year's ocean of accidents." A comparison of 1951 with 1950 shows that pedestrian deaths were "held in check" while injuries were reduced by nearly 9,000.

Other facts from "Lucky You":

Saturday was the most dangerous day of the week to drive.

More persons lost their lives during the hour from six to seven p.m. than in any other hour. Injuries hit their peak two hours earlier, from four to five p.m.

Ninety per cent of drivers involved in 1951 accidents were males.

Ninety-seven per cent of drivers involved in 1951 accidents had at least one year of experience behind the wheel.

Thirty-eight per cent of last year's fatal accidents occurred on the open highway.

There were ninety-two per cent more fatal accidents on icy roads last year than in 1950.—*Public Information Department, The Travelers, Hartford, Connecticut. Excerpt: Minnesota Medicine, June,* 1952.

"Time and attention," wrote William Heberden in 1768 of the syndrome he had named *angina pectoris*, "will undoubtedly discover more helps against this teizing and dangerous ailiment."[1]

Today, a variety of "helps" are used in the treatment of this "teizing and dangerous ailiment." One of the more effective: 'Eskel', reported by Osher and Katz to be beneficial in 80% of cases.[2]

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1. Read at the Royal College of Physicians, July 21, 1768.
2. New England J. Med. *244*:315 (March 1) 1951.

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MORE ON PHYSICIAN-PATIENT RELATIONS

Within the memory of many persons, there occurred the "public be damned" attitude of certain of America's largest industrial and financial organizations. Today these same groups enlist the aid of highly organized and efficient Public Opinion Research counselors. They have come to realize that what the general public thinks of them is of momentous importance. As Bobbie Burns so well put this same thought:

"O wad some Pow'r the giftie gie us
To see oursels as ithers see us!
It wad frae monie a blunder free us,
and foolish notion."

America's great captains of industry and leaders in the financial world - men who created the world's most powerful economy - finally arrived at a painful conclusion. They discovered to their surprise and utter consternation that they knew very little about what people actually thought of them and their methods. They discovered too that this thinking might lead to results inimical to the welfare of industry.

How does all this apply to the medical profession? The physician is in closer contact with the individual than is the member of any other profession. He occupies a unique position in our social structure. He has been ensconced in this position since the beginning of man's attempt to heal the ills of mankind. The lawyer's position in society is well defined. In many respects he deals with material aspects of man's existence. The minister of the gospel, regardless of doctrine or denomination, deals with the spiritual estate of the individual. The physician, however, deals with more humans and under much closer circumstances than do members of any other profession.....he should, for the benefit of all, ever be on the alert to leave none but favorable impressions. *C. A. Gustafson, M.D. The Public Relations Side of Medicine. Ohio M.J. Aug. 1952.*

Nations like Sweden and the U.S.A., which have been able to make the relatively small investment involved in a sound public-health program, have reaped a rich harvest in life capital as a result. C.-E. A. Winslow, The Cost of Sickness and the Price of Health, WHO Monograph Series, No. 7, 1951.

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COMPENSABLE DISABILITY

It will often be heard said by the inexperienced that a piano player should receive greater disability for the loss of a finger than a laboring man, or that the loss of a foot is worth more to a dancer than it is to an office worker. These opinions, no doubt, may be correct, but it is not the responsibility of a doctor to determine the monetary value of an extremity. The doctor should decide only the extent of the anatomical and functional loss of the extremity. He is a specialist in this field, but he is not a specialist in monetary values. *Carl O. Rice, M.D., The Evaluation of Compensable Disability. Minnesota Med. Aug. 1952.*

There are certain diseases which notoriously increase the incidence of tuberculosis, diabetes mellitus and stenosis of the pulmonary valve of the heart for instance. Whether diabetes acts by reducing the general resistance or whether the added sugar in the blood favors the growth of tubercle bacilli is a moot question. Stenosis of the pulmonary valve presumably acts by reducing the blood supply to the lungs and reducing local resistance. George Blumer, M.D., Conn. State Med. J., May, 1952.

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FRACTURES OF FOREARM

It is evident from study of these cases that growth is able to correct a remarkable amount of deformity resulting from a fracture in the distal third of the forearm in children. Accurate reduction is desirable and every effort should be made to restore anatomic relations at the first attempt by closed reduction. In the event that accurate reduction is not obtained or should angulation recur after the cast has been applied, it is better to accept something less than perfect reduction than to perform repeated manipulations or open reduction. Practically no fracture occurs in the distal third of the forearm in children that cannot be treated better by closed than by open methods.

Blount has noted that a perfect functional result and, after a year, a perfect anatomic result will ensue in a young child without the ends of the bone being in apposition if alignment is reasonably good. The younger the child and the nearer the fracture is to the end of the bone, the less particular the physician needs to be.

In this study, the end results were the same for patients in whom the deformity after reduction occurred as for those in whom fractures were anatomically reduced. In no patient in whom the shaft alone had been injured was there any impairment of function or any evidence of the previous deformity one year after injury. *Raymond G. Giberson, M.D. and John C. Ivins, M.D., Fractures of The Distal Part of The Forearm in Children. Minnesota Med., Aug. 1952.*

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the surface to be covered with a membrane composed of mesodermal hyalin fibrinoid tissue which appears to afford a satisfactory covering for the wound surface. On a human wound this hyalin membrane appeared at three weeks to afford as good a protective covering as did a homograft of brother's skin applied simultaneously to the same patient.—*Dr. Beverly Douglas, Homografts of Fetal Membranes as a Covering for Large Wounds — Especially Those From Burns, J. Tennessee M.A., June* 1952

Ten years ago, a chest X-ray for the apparently well person was relatively uncommon. In 1950, however, some 15 million people in the United States had small-film radiographic examinations of their chests in tuberculosis screening programs. Since the development of the photo-fluorograph in the late 1930's, and its refinements in the 1940's, the use of miniature X-ray equipment by local official and voluntary health agencies has grown enormously, and there is scarcely a state or county of the United States where case finding by this means has not been done, either in community-wide surveys or in segmental surveys of special population groups. Robert J. Anderson, M.D., Medical Papers of the Annual Meeting of the Canadian Tuberculosis Association, May, 1951.

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